EVERY DAY GUIDE TO HEALTH

PHYSICAL EXERCISE FOR DAILY USE

BY

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PHYSICAL EXERCISE FOR DAILY USE

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by
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To You!

YOU WANT THE BEST, happiest, longest LIFE that may be granted to you

to this end

YOU NEED ALL THE HELP that modern SCIENCE, RESEARCH and EXPERIENCE can give you

but especially

YOU NEED A COMMONSENSE WORKABLE APPLICATION of all this WISDOM to your own INDIVIDUAL life and problems, in a way THAT TAKES YOU AS YOU ARE and helps you to become all YOU WISH TO BE

for this

YOU NEED EXERCISE

THIS BOOK is therefore prepared for YOU to give YOU as much aid as any mere book can give and withal to add to your HAPPINESS while you are gaining your 100% Health.

So may it be!

FOREWORD

TO THE PHYSICIAN

A new field is opening for the physician.

You are being called upon to make people's lives happier, stronger and more efficient. You are the proper source from which the world will gain its health, happiness and efficiency. You will build strength. You will teach men, women and children how to live so that they will get the better things into their lives and will possess Good Health in Great Abundance. You are to be the Health Doctors, for a new point of view, that of Constructive Health, is beginning to sweep over the country.

You have conquered many diseases—smallpox, the black plague, yellow fever and the hook worm are fading into history. Tuberculosis, diphtheria and malaria are fast giving way. You have thrown great sanitary safeguards around civilized communities and have made marvellous records in disease prevention.

You are now called to the service of making superior men, capable of living 100% lives—the development of

an increasingly better race, living more fully, happily and efficiently, to the greater glory of God—and Man.

. . . . . .

To aid this purpose this book was written to you, your patients and health clients, to help you to prescribe exercise for them individually, accurately and with as much certainty of definite result as you expect from pharmaceutical and other therapy, to which exercise is a useful adjuvant, but not a substitute.

This book is also designed to help your patients to understand your instructions and to carry them out enthusiastically and efficiently.

Then again—remember that you yourself are still human; you should get for yourself the good things you give to others, especially Good Health in Great Abundance. The world needs your forward leadership.

May this Book add to Your

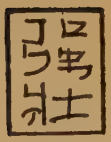
Health, Happiness and Prosperity

THE SALUTATION OF THE DAWN

* * * *

Listen to the exhortation of the dawn!
Look to this day! For it is life,
The very life of life.
In its brief course lie all the verities
And realities of your existence.
The Bliss of growth,
The Glory of action,
The Splendor of beauty,
For yesterday is but a dream,
And tomorrow is only a vision;
But today well lived
Makes every yesterday a dream of happiness,
And every tomorrow a vision of hope.
Look well, therefore, to this day!
Such is the salutation of the dawn.

—*From the Sanscrit.*



KEONG JONG

GOOD HEALTH IN GREAT ABUNDANCE

THE ANCIENT SIGN OF THE ANCIENT PEOPLE WHO HOLD THE STOREHOUSE OF THE WISDOM OF THE AGES, THE SYMBOL OF THE ETERNAL UNCHANGING SOURCES OF

STRENGTH AND SERENITY

HEALTH, HAPPINESS AND EFFICIENCY

THE MODERN FORMULA OF THE 100% LIFE, THE KEYNOTE OF THE TWENTIETH CENTURY—WHOSE DOMINANT TONES ARE

SPEED, POWER, AND ACCOMPLISHMENT

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Physical Exercise for Daily Use

CHAPTER I

ONE HUNDRED PER CENT CONDITION

THE EXECUTIVE
THE MILLIONAIRE
HOW HE DID IT
100% CONDITION
THE 50% MAN
HOW TO WIN THE 100% LIFE
SEVEN POINTS

CHAPTER I

ONE HUNDRED PER CENT CONDITION

THE EXECUTIVE

The door of my office opened suddenly.

I was sitting quietly at my new desk just after I had been installed as the Director of the Department of Health Instruction, Exercise and Athletics for the New York Public Schools and was absorbed in the huge problem of health training for the 800,000 children and the 22,000 teachers of the city, when my constructive reverie came to an abrupt stop.

I looked up and saw one of the leaders of the educational system.

He attacked at once.

"Crampton, what's all this about exercise? I do not believe in it at all. Look at me! I have never exercised and, what's more, I am never going to."

I looked him over and saw a wonderful head, a pallid

face, a pair of keen eyes from which flashed a spirit of great power, and a pair of thin shoulders from which hung a narrow black coat; a superb intellectual structure upon a mean physical base. His aggressive, dictatorial spirit I knew made argument useless, so I remembered old advice: "Ephraim is joined to his idols. Let him alone."

I did. I have no doubt that he followed his intention, for his vacations grew longer and longer and more frequent, and finally, after a long slowly-losing struggle, he went on his long vacation.

He is dead.

This man committed a crime. He had no right to die. He was one of New York's most useful citizens, for he had developed a system of education that had brought to hundreds of thousands of newly arrived Americans, strange to our customs, the best in art, literature, music, and the spirit of our American social and political institutions. He was a pioneer in Americanization to whom the whole of the United States owed a great debt of gratitude, but when he was needed the most he was gone; not killed in action, but destroyed by his own stubborn refusal to obey the immutable laws of the Supreme Commander of all of the Soldiers of the Common Good.

His 50% body destroyed a 100% mind.

THE MILLIONAIRE

Shortly thereafter I was invited to luncheon in the Bowling Green Building by one of the leading young

business philanthropists of the city for a discussion of a problem in social hygiene. He came in a few minutes late, and apologized briefly:

"I have just come from the gymnasium. I take an hour between eleven and twelve three times a week for exercise and I find that it does me a great deal of good."

He was a great young man. He had to be, for he personally directed a business involving many hundreds of millions of dollars. During this last decade he has doubled his fortune and has given much of his time and his money to large health and education movements. At a conservative estimate he has saved over ten thousand lives and added to the happiness of ten million.

He is alive!

And, what is more, twenty years after, he has good health in great abundance. He has the superb promise of many years more for the enjoyment of his personal position and power and for the greater service of mankind. His time is worth about $1000 an hour, for his income is well over $2,000,000 a year. And I estimate he spends at least $300,000 worth of time a year in exercise!

One of these men, in true, old-fashioned stubbornness, acted as if he were a disembodied spirit, his flesh a mere despised encumbrance. The other recognized that his body might seriously handicap his career and bring it to an untimely end, on the other hand, that it could be the unfailing support of a high purpose and add vigor to spirit as a "temple of the Holy Ghost."

The Executive died. The Millionaire lives. Each labored hard. Each carried a great load of responsibility. The one went gradually down into one illness after another while the other increased his strength and power and is now living a happy, full, vigorous life, well past middle age, with a bright prospect of a green and serene old age,—if he ever gets old at all!

HOW HE DID IT

You can do it too, for he is only one of an increasing number of men and women who know the difference between average condition and real, abounding good health, and, what is more, they intend to possess it.

This difference between the ordinary condition of the average man—"Feeling pretty well, I thank you," and the splendid, vigorous health of the man in fine condition —"Feeling great!" ready to tear up a mountain of work —there is as much difference between these two as there is between average health and being sick in bed with typhoid. In fact, ordinary average health is only half way between sickness and real health, real 100% vigor. It is only half well; for it is half way down hill toward disease and disability. It is not more than 50% of what we ought to be.

ONE HUNDRED PER CENT CONDITION

This is good health in great abundance; what the Chinese call "Keong Jong." The only people who cannot

attain it are those who have an incurable disease or some unconquerable deficiency and these are very few.

The man in 100% condition is a happy one. Life has a zest, he has a keen appetite for the work that he is doing, he is interested in his business, his social affairs, his home, his projects, his golf. All his experiences have color and action. He is popular among his fellows; people like him because he likes them. He laughs a great deal and heartily and he makes others laugh too. He rises early and eats a good breakfast. His digestion is so good that he does not know he has a stomach. His eye is bright, his skin clear. He strides down the street with his head up, his back straight and a handshake ready in each fist. He may not be a Sandow but his muscles are elastic and strong. He can sprint for a car and catch it. He can climb a few flights of stairs and arrive at the top without gasping like a fish out of water and turning purple. He puts a lot into life and gets a lot out of it. He is a vigorous, going, get-there citizen, a regular all-round man.

He is 100%. Why not you?

THE FIFTY PER CENT MAN

To the casual observer he may look like 100% and he may even think that he is 100%, but he is not. He lacks the tingle of the tissues that accompanies the fullness of health. In fact his various organs have little reason to be happy. They are doing their work more or less grudgingly and they feel the lack of attention that they

should get from a careful owner. They protest. There is an occasional ache. A creak in the joints on a rainy day or in the springtime. There is constipation, and the 50% man is one of the twenty-five million citizens of the United States who have the laxative habit.

While he once may have been athletic his muscles now are soft. His heart is small and flutters when he has to run for a car. He may not be actually a grouch but he does not radiate sunshine. As he grows older his chest gets as flat as his abdomen gets round. He misses a lot in life. He takes most of his exercise on the bleachers or reading the sporting page. His will power is weak for he usually smokes too much and he cannot seem to hold down his other indulgences.

There are many different types of the half alive, half dead man. There is the average good natured type, slack minded, who lives along without any plan of life, with little or no self-direction. He takes things as they come, without sense enough to double the good and dodge the bad. He may be, on the other hand, a hard, aggressive worker, driving along in his chosen business or profession, so absorbed that he "has no time" to give thought to himself. If he misses a smash-up at thirty, he gets it at forty, and if he is lucky he dies in his fifties, because if he lives longer it is worse than dying.

Another type is the moral coward,—a man successful enough in his business but who does not dare go to the health doctor for an overhauling for fear that he may

have some serious illness. He would rather live in the comfort of ignorance and chance vital disease and death than to know just where he stands and fight his way free. He is like the man who never takes inventory or account of his stock in his business for fear that he may find out that he is losing money. As Uncle Zeb says, "Sure! Ignorance is bliss, but it often gets blister!"

To everyone is given a certain amount of youth and vitality and to everyone is given the chance to develop and preserve them. There are a thousand kinds of weakness, deficiencies and semi-diseases which shorten and darken life and keep a good man down, but there is always a way to live the 100% life.

HOW TO WIN THE 100% LIFE

Good health in great abundance: that powerful, happy state of tingling health is only for those who by nature or by cultivation possess three essential qualities:

Common Sense
Initiative
Will Power

Common Sense,—to realize that there is a kind of life that is better than mere existence. Merely to recognize facts without understanding what they mean in terms of life, liberty and the pursuit of happiness is not enough: complete conviction is necessary. This is the beginning of wisdom.

Initiative is the second essential. It means "get up and go." It means the ability to read, study, experiment and find out the ways of actually possessing this great quality of good health in great abundance for yourself.

Will Power, the third essential, is the quality that makes us do those things which may be a bit burdensome but will pay the great dividends of those days, months and years with the sunshine of success, competence and serenity. Don't think you can bargain or cheat. As the old hymn has it, "Must I be carried to the skies on flowery beds of ease?" If you are not prepared to make a program and stick to it you are pretty poor stuff and you had best hand this book to a better man for it will do you no good. If you are really a winner and prepared to get out and win, start on the following program:

PROGRAM

1. Complete health and medical examination, repeated annually.

Do you overhaul your motor annually? You know what happens to the car if you don't. It costs $100 to overhaul a $2500 car. It costs $25 to overhaul a $100,000 man.

Suppose you could never get another motor car. You would be exceedingly careful how you treated the one you have. You can get a new automobile any time you have the price, but you can never get a new body. Never!

2. Work.

Work is the great life saver and a great life maker. Too much work kills,—so does too little. Learn to carry your

burdens snugly adjusted to the broad muscles of the back the way an Adirondack guide carries a seventy-pound pack and a canoe as well, not like the enthusiastic tender-foot who is quickly crippled by a poorly adjusted load.

3. Rest, Relaxation and Fun.

In these days of civilization and strain, rest is an art, relaxation a feat, and fun an accomplishment. One-third of life should be spent in sleep, another third should be spent in relaxation, enjoyment and entertainment, and it is worth while to apply as much sense and wisdom to these two-thirds as we do to the eight hours a day we spend at work.

4. Bathing.

"There is an impassable gulf fixed between those who bathe daily and those who do not" declared a college president. Bathing is not only for cleanliness. There are baths which stimulate the circulation and tone up the nervous system. Next to exercise, bathing is the least expensive kind of medicine you can take as well as the most pleasant.

5. Service.

"Pleasures may be bought brand-new, but real happiness can only be obtained second-hand." When others have been made stronger, better and happier by our

efforts we receive rewards which can be obtained in no other way. Self-seeking as a life program means early suicide. The policy of service spells success in personal affairs, in business, and in health.

6. Diet.

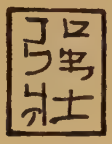
What we eat determines our constitution. The food of today in large part makes the man of tomorrow. A few simple rules based upon the latest modern science of food values and vitamines and the profit that comes from one's own experience can greatly aid our constructive health purpose. The man of forty should know by experience what he should and should not eat and he should find out by study what diet does him the most good.

7. Exercise.

Exercise is an essential. It is one of the ways by which we can achieve health and happiness and efficiency in greatest degree and with great certainty. Exercise has been so common an experience and so easily practised that there have arisen in all times and from all quarters many varieties of exercise "systems" by all kinds of people, from the lowest dollar seeking charlatan to the earnest scientific leader.

The result has been a chaos of conflicting systems and contradictory opinions. The seeker after truth must be on his guard, for advertisements and pretensions of systems may be misleading and untruthful, though for a time

popular. One who would teach the multitude must be unswervingly faithful that his leadership should be completely and eternally good and true.



CHAPTER II

WHAT IS PHYSICAL EXERCISE?

DIFFERENT CLASSES OF EXERCISE
ANATOMICAL EXERCISE
STORIES IN BODIES
POSTURE OF GOOD HEALTH
THE MECHANICS OF GOOD HEALTH
PHYSIOLOGICAL EXERCISE AND ORGANIC HEALTH
LARGE MUSCLES ARE OUT OF DATE
PSYCHOLOGICAL EXERCISE
EFFECT OF THE BODY ON THE MIND
EXERCISES OF THE MIND

CHAPTER II

WHAT IS PHYSICAL EXERCISE?

There are as many different kinds of exercise as there are different kinds of food, and their effects are just as various as are the effects of different kinds of medicine.

Some exercises will increase the heart rate; others, strange to say, will actually make it slower. Some will increase the weight of the body; others will take weight off.

Exercises will rest or excite, built up or tear down, depending upon what they are and how they are done.

DIFFERENT CLASSES OF EXERCISE

Man has three main parts:

1. Structural Framework
2. Internal Organs
3. The Mind.

Three kinds of exercise are used corresponding to these three parts:

1. Anatomical
2. Physiological
3. Psychological.

1. Anatomical.

The framework of bones, ligaments and muscles, the anatomical structure of the body, needs exercise. This structure may be sturdy, straight and strong, or weak, crooked and lax. Exercises which make and keep the structure of the body straight and strong I call *anatomical* exercises.

2. Physiological.

The internal organs, the heart, lungs, liver, kidneys and digestive tract and glands are the organs which conduct the physical life of man. They perform the processes of living. Their activity may be weak, irregular and impaired, or vigorous and full of singing, vital energy. Exercises which stimulate the activity of the internal organs and make them strong I call *physiological* or organic exercises.

3. Psychological.

We think and feel. We have mind and emotion. These are much influenced by what we do. Some things we do are interesting, entertaining,—they are fun: for instance, games, play and dancing. These are exercises

which may be more psychological than physical. But there is a psychological element in all exercise, and it must be taken into consideration. Almost all exercises are good fun of one kind or another, though some test the will and train it, others require determination and effort which to normal man is a quiet but very real satisfaction. All useful exercises can be interesting. There is no good reason why they should be a bore.

Every exercise has these three elements present in varied proportions.

ANATOMICAL EXERCISES

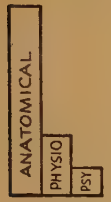
The Structure of Health.

Mark Twain said, "Every one ought to have a few bad habits so he can give them up when he gets sick. That will help him get well."

This may be why it seems that the healthy die young and the hardened sinners live to be a hundred—occasionally. This is all right unless the bad habit leaves a condition which you can't give up when you give up the habit, —soft muscles, round shoulders, hollow chest, crooked back, for instance. You can't give these up when you get sick, and when you wish you could you have only a poor deficient body with which to fight.

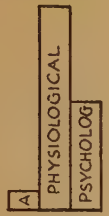
These deficiencies should not exist. They do not exist where there is good health in great abundance. They can of course be eliminated by persons in average health who will take the proper exercise.

"STAR GAZER"



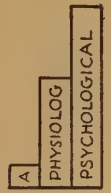
A corrective exercise. Necessary to every one. Contrast its high anatomical effect with low anatomical effect of other exercises

BASKET BALL



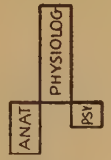
The most vigorous exercise known short of actually fighting for one's life

GOLF



Recreation with a little physiological exercise from walking. Hitting the ball is little exercise unless you are a dub and need many strokes

LABOR

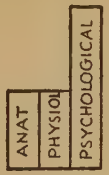


It may have physiological value, but it is often of negative anatomical and psychological value. It can wear out, drag down shoulder and chest, and be a drudgery

CROQUET

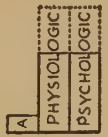
Stooping over makes this of *minus* anatomical value. Recreation with almost no exercise

VOLLEY BALL



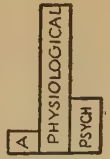
Looking up makes this of positive anatomical value. Recreation with a little exercise

WALKING



Physiological effect varies with speed. Psychological effect varies with companionship and interest

RUNNING
(PEP. HOPS)



The greatest and simplest physiological exercise

At the Post Graduate Hospital many sick people who come to the Medical Department are referred to a special division for reconstructive work. Their bodies show the history of their neglect of exercise as clearly as if on a printed page.

STORIES IN BODIES

Here is a young man, a clerk of thirty-four years of age. His chest is hollow, his shoulders fallen, and his head hangs. His skin is muddy, he complains of indigestion, frequent colds, and he has a persistent pain in his right side.

He feels down and out—and he looks it. In fact, '*down and out*' is his main trouble.

Look at him! His head is down, his chest is down, and his abdomen is bulging out. It is no wonder that his health and spirits are down too.

He is anatomically distorted. His lungs and heart are cramped; the abdominal organs slump; his blood pressure similarly is low, and all his vital processes drag and stagnate.

He is ready to fall an easy prey to any ambitious disease germs that may be about, from tuberculosis to typhoid.

He is only half alive, and is losing ground fast.

His main trouble is *anatomical.* The attraction of gravitation has weakened, distorted, and pulled him down.

He may be suffering from any one of a dozen different illnesses; but he has allowed himself to become the picture of ill health for his *posture* is the posture of ill health.

THE POSTURE OF HEALTH

Lift up that head. Raise the chest. Straighten the spine. Elevate the ribs. Tighten the bulging abdomen,—and you have a new man. Now his heart and lungs have room; the liver is lifted; the intestines are no longer in a mess in the pelvis; the blood is drawn up to the heart from the stagnant vessels of the abdomen and goes coursing through the body.

The man lives!

The only change we have made is *mechanical.* We have taken a slouch and made a human being, merely by lifting up and replacing the parts of the body that had been sagging down.

How is this done? By the muscles. By contracting certain muscles in the proper way he was raised from a posture of disease to a posture of health.

Can this always be done at once in a moment? No, indeed. A posture of ill health soon becomes a habit. The body stiffens in its bad position and it takes much work and effort to put it back.

Will he stay in this position if he can take it at once?

No. Because his muscles are not strong enough to hold him there.

What must he do to get back into the position of health and stay there?

He must make certain muscles in the neck and around the trunk possess three qualities. They must be

1. Strong
2. Short
3. Vital

Exercises which will produce—make these muscles do the mechanical work of replacing and upholding the man's body in the position of health, are *anatomical* exercises, for they are used for the purpose of producing an anatomical improvement.

THE MECHANICS OF GOOD HEALTH

No one can have health in great abundance while he remains in the posture of ill health. This great gift can only be won through the use of such exercises as will put a man in position to claim it.

There is a story of a young man who set out to win the grant of a great honor from a King in a far country. He journeyed far and had many adventures and acquitted himself nobly, and he came to the King to claim his reward. He said, "Give me the great boon I seek." The King replied, "Put yourself in position to receive it, and I will."

That has been the experience of many. It will be the experience of multitudes, for good health in great abundance is "as free as the air." Like the air, its spirit and vital force can be obtained only through inspiration, that indrawing and uplifting which comes only from the effort of the individual to take unto himself the great forces of the Universe! You must put yourself into the Posture of Good Health if you would win it.

PHYSIOLOGICAL EXERCISE AND ORGANIC HEALTH

The bodily appearance of health is not everything. Looks may be deceptive. A man may have the muscles of a Hercules, with a straight back like a drum major, but still lack vitality. Like the auctioneer's second-hand clock, he may have a beautiful front, but no works to speak of.

A college football hero who ten or twelve years ago had been selected a member of the All-American Team for two consecutive years came to me as a health client because "a friend urged it upon him, not because he needed it." No indeed, he was unassumingly proud of

himself, for had he not a splendid athletic record? Had he not gone through the War and come out with the rank of major and a decoration? I put him through his measurements and tests, a thorough searching examination. He was a splendid fellow, six feet two inches, 198 pounds, a straight back, clear eye and clean skin,—a superb type of man and withal a gentleman.

Yet I found the blood pressure index of his physical condition (ptosis test) only about fifty per cent. Corroborating this proof of deficient internal condition was a soft layer of ease-grown fat distributed evenly over his splendid frame. I sent him to a gymnasium and visited him at his work two days afterward. He complained of the "childish" exercises that I ordered. He referred modestly to his athletic record, he claimed to be in fine shape and wanted to play handball and box.

He needed a demonstration. So I gave him a fair competitor and watched him play handball for five minutes. Then I took his pulse. His heart was throbbing wildly at the rate of 162 beats to the minute. He was soft inside as well as out. His heart and his blood circulation system were out of training. His organs were weak because their processes had become stagnant. He had a fine organic equipment but it was gradually going bad. There are at least half a million men in the United States between the ages of thirty and forty whose organs are going to the bad in just the same way, only they have not such a fine body to neglect.

How can you be made strong inside? How can your organs be toned up, put into condition and the currents of life made vigorous, smooth and powerful?

Again the answer is exercise, but exercise of a kind entirely different from anatomical exercise.

For good posture we use exercises which add a special, direct effect upon the muscles themselves but now we need the *effects of muscular exercise on the internal organs*, for it is only by muscular work that we can strengthen the heart, lungs, stomach, liver, intestines and endocrine organs. Pills will not do it, neither will massage nor yet faith, for "faith without works is dead." This is true of life as well as of religion. Exercises are needed that will make the organs work, and work hard!

PHYSIOLOGICAL EXERCISES

What happens when we use the muscles? The muscle contracts, it uses up oxygen and the food that is stored within its substance. It calls on the blood for more supplies. The blood vessels and the muscles while exercising contain from six to eight times more blood than the resting muscles! More blood must therefore be called up from the great storage places, the blood reserve in the veins of the abdomen. The heart must work harder and faster. The lungs must supply more oxygen. This is why muscular exercise is heart and lung exercise.

The supply of food in the blood is soon used up. More must be obtained. It is found in the liver where it has

been stored since the last meal and it is transmitted to the muscles by the blood. Muscular exercise is also liver exercise.

When the supply is decreased below a certain point, the stomach and intestines are notified that more food is needed, more food, more food quick, and they then send word up to the brain "I am hungry!" This is the only way to get a real appetite and the only incentive the body has to digest a good meal. A well used stomach cannot have dyspepsia,— an active set of intestines cannot poison the body. Muscular exercise is therefore exercise of the gastro-intestinal tract.

All of the ductless glands, endocrine glands as they are called, and the sympathetic and autonomic nervous systems, the telephonic connections of the organs are made to work by exercise for they are the executives and business officers of the organs (the "corporation" if you like).

Muscular exercise can therefore be made organic exercise. In no other way can we make the organs strong and in no other way can we keep them strong.

Not all exercise equally stimulates the internal organs. It would take a long time to make us hungry by using the muscles of the fingers alone, for little food is used up while there is a great expenditure of nerve force in making many small contractions. Exercises such as running and dancing which use the large muscle masses in the legs and hips, will stimulate the heart and lungs and create an appe-

tite quickly. This is because large muscles are used and are used in full, deep, rhythmic contraction.

This is the outline of the organic or physiological effects of exercise. These are quite different from the effects of exercise on posture or the effects on the mind and emotions, as a reading of the succeeding chapters will make clear and the use of the exercises will happily demonstrate to the seeker after good health in great abundance.

LARGE MUSCLES ARE OUT OF DATE

The prevailing idea that exercise is of importance primarily for the muscles is erroneous. Large muscles are out of date. They are good for display in the gymnasium or on the seashore. Those who wish good health in great abundance will not work for bulging biceps. They will follow the ways which will result in a smoothly working, super-efficient set of internal organs and a straight body with a high held head. The vital force of the body is the sum of the combined activities of the organs. If they work together strongly and in harmony, the vital force is like a half-heard music of a hidden orchestra that fills us with a sense of ease, confidence, power and elation. If the organs are easily strained or stagnant, elation vanishes, ease and power flee, pain approaches, leading a dim sinister train of trouble and illness.

Good health in great abundance is the rejoicing of the body that is alive and full of strength.

PSYCHOLOGICAL EXERCISE

The Effects of the Body on the Mind

Man is made not only of framework and internal organs. He "has a heart." He thinks, and what is more important, he feels. If he has a good body in good running order, the mass of sensations arising from his "subconscious mind" form an undercurrent of happiness. He is likely to greet his friends in the morning with a "Why, hello, old man, how goes the world this morning?" instead of a formal, half grumpy "G'morning, h'ware you?" Physical conditions have many mental effects.

By reason of strong muscles, man holds his head high, he has a sense of "up and coming." He feels superior to, or at least as good as, anyone else. If he holds his chest up he will have a sense of power. High head, high chest —high thoughts.

If his heart beats smoothly and strong and the digestive organs are in good tone, he has a sense of well being. He feels "good." The Chinese many centuries ago, while recognizing the fact that logic and intelligence resided in the head, located the soul with its feelings, emotions, exaltations and depressions, in the abdomen. Modern science reveals the great knots of nervous tissue below the diaphragm, the solar, semi-lunar and other plexuses behind the stomach, all of which goes to show that the authors of Keong Jong were not so far wrong.

But there are things other than the crude influence of flesh on the brain. Man needs to exercise his mental

muscles and the organs of the mind itself for the mind has its own structure and operations.

EXERCISES OF THE MIND ITSELF

The mind was made by the long struggle of the race for existence in forest, mountain and stream. Man had to run, jump, climb, throw, swim and fight. He lived a very keen life that rejoiced in struggle and in contest and his children lived to be our ancestors. Those who did not possess these qualities died and their children with them. So the minds that are handed down to us are filled with these racial experiences. We are trained by heredity to enjoy them. Therefore we go to see contests in speed of man, horse, automobile and aëro. We enter into the contests of baseball, football and prize ring with the players and pugilists and share their fortunes. We enjoy even the sedentary games of skill so long as we ourselves are contesting or attached to one side or the other by interest.

Exercise that has the two elements of hereditary occupation and of contest has psychological values that add strength and smoothness to life.

Then again, there is the whole outdoors which we once enjoyed. These trees gave us shelter and subsistence. Hills, valleys, plains, where we lived and made our various fortunes. All of these are "home," the real home of the human race.

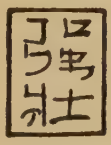
Our minds grow dull and stupid in civilized pursuits

foreign to their bringing up, forced into unnatural ways and fed by artificial sights and scenes. We are living canned lives in six reels to the screech of a phonograph.

We need contest, particularly the men of us, and we all need the out-of-doors. We need exercises that give us enjoyment and happiness for they have the stamp of nature's approval. We need exercises that require effort, precision and accuracy to discipline the mind and strengthen the will and to give it a satisfaction of accomplishment, for this is the method that nature used to make a superior race out of the ruck of the common crowd.

CONCLUSION

From physical sources came all light, all music and all beauty, although they have a spiritual being and a divine destiny. The seeker of good health in great abundance must not only make his body strong and stimulate its life-giving processes, he will also train his will to fortitude and effort and open his heart and soul to the happiness and the rejoicing of all the experiences of health.



CHAPTER III

MORNING EXERCISE FOR DAILY USE

PHRA THE PHŒNICIAN
HOW TO START
THE GREEN LIEUTENANT
WHAT WE WANT TO ACCOMPLISH
EFFECTS OF THE EXERCISES
DON'T START ANYTHING YOU CAN'T FINISH
THE NIGHT BEFORE

CHAPTER III

MORNING EXERCISE FOR DAILY USE

PHRA THE PHŒNICIAN

Phra the Phœnician was apparently killed in a bloody fight between his trading crew and the savage British aborigines, but the Princess partly revived his body by the magic of the Druids and changed his death into a sleep of half a thousand years. When Phra finally woke up each tissue of his body pained and ached as the blood flowed again through long disused arteries and veins in a long, agonizing return to life.

The time of day that most of us feel ought to be left out entirely is the time that comes in the morning between waking up and getting up. Yet these moments can be the happiest of the day. The gradual return to consciousness, the sensation of renewed vitality, the awakening of the tissues and their warming to vigor and power all

develop a desire to get up and go to it in the man who has good health in great abundance and who knows how to manage his own physical affairs. The morning wake-up can be like strains of physical music, the prelude of happiness to run through and underneath the work of the whole day as a hardly heard accompaniment to the hours of labor.

The wrong exercise is a bore even when done to music. Not one in a hundred men will keep it up, but the right exercise taken at the right time in the right way carries its own conviction and reward.

HOW TO START

All systems of morning exercise hitherto presented assume that you are out of bed standing on the floor in your pyjamas with a happy smile on your face. This is a mistake. You are in bed, very comfortable, and intending to stay there. The morning exercise should start where you are. It should begin just where you find yourself and gradually wake you up, little by little, each exercise adding power for the next one until you are up and going, ready for anything.

Consider the automobile.

Before you can roll down the street you must wake up the car and get it going and ready to take up its load. You first wake up the self-starter and after a rumble or two the motor catches the spark and begins to throb. You give the throttle a push with the foot and warm up

the engine. Then you gradually let in the first speed; after momentum is gained, the second and then the third speed and you are off, carrying the load which you were built to carry.

This is the way to start the human automobile on its daily course.

THE GREEN LIEUTENANT

Most men have the wrong idea about morning exercise. They want to do too much.

Once when I was an observer attached to a military camp during the war, I came over the brow of a hill upon a company engaged in its daily morning "setting-up" exercise. It was a medical reserve corps, a group of physicians just called to the colors. They were getting their first morning exercise. A young lieutenant was up on a platform in front of them. He had his little orange colored regulation book in his hand. He was giving vigorous trunk and leg exercises calling for tremendous heart and lung activity. The men before him stuck gamely to their work. They were "in the army now," they were prepared to be heroes and they found their task commencing early. They would not quit. Their faces became ashen as they sweated doggedly on. Here and there was a face with a ghastly stricken look that physicians recognize as circulatory exhaustion. After they had been given fifteen minutes of the hardest kind of work the young lieutenant turned the command over to the regular

captain and stalked off the platform as if to say, "Look at what I have done to these fellows! Me! I am one great man!"

He soon found out his mistake for it was explained to him thoroughly in the presence of his commanding officer an hour later,—but if he had been an enemy of his country trying to do as much damage as possible in fifteen minutes, he could hardly have taken a better method.

Vigorous exercise has no place before breakfast.

WHAT WE WANT TO ACCOMPLISH

What can we get out of it? What purposes, what results? What are the best exercises we can find?

The best answer I can give you is in the following seven exercises. They take the man where he is and put him where he wants to be, up and going.

The first three exercises are taken in bed, the fourth sitting and the last three standing.

Each exercise has its own individual purpose and effect upon the body and the mind.

Each exercise prepares for the next as naturally as one breath follows another. A minor effect of an exercise becomes the major effect of the next.

Muscular work is not emphasized. Organic health is desired, not large muscles.

Circulation and digestion, the fundamental processes, are stimulated and improved.

Each exercise is the result of over a quarter of a century

of study, research, practice and experiment and is the best that this kind of earnest effort has so far produced. Each exercise has passed many, many searching tests. It is the champion of its kind.

The whole series of seven is the result of an endeavor to get the best seven exercises as a group as well as the seven best individual exercises. They recognize the low vitality of the newly awakened sleeper and build that vitality up to a climax at the sixth exercise and at the seventh weld the man into as nearly a perfect vital human being as he is capable of becoming.

The schedule of exercises is given below. Each exercise is briefly described and pictured in the next chapter. Afterward each exercise is fully discussed in a separate chapter and its physiological action described. The great diversity of human needs can never be met exactly by any set of seven, ten or a dozen exercises. Therefore other exercises of the same group to which each belongs are presented and analyzed so that the seeker after good health in great abundance can make progress with the help of his physician or physical director and work out his own salvation.

No. Name	*Major Effects*	*Minor Effects*
1. The Stretch	A mild preliminary stimulation of the whole body.	Leg muscles contract, back straightens, general muscular contraction, organic massage, aspiration of the thorax, mechanical stimulation of the circulation.

2. Pumping	Mechanical stimulation of the circulation by increasing the aspiration of the thorax.	Preliminary abdominal massage; exercise of the diaphragm, abdominal wall and intercostal muscles; relief of abdominal congestion.
3. Kick-Up	Exercise of abdominal muscles and getting out of bed properly.	Preliminary trunk and abdominal exercise in a horizontal position; organic massage.
4. Churning	Abdominal organic massage.	Abdominal muscle training, flexibility of the spine, stimulation of spinal cord and sympathetic nervous system.
5. Tickle Toe	Trunk muscle training for the upright position.	Abdominal massage, circulatory stimulation, development of chest, neck and shoulder muscles.
6. Pep Steps	Heart training, circulatory stimulation.	Leg muscle exercise, flat foot insurance, general body stimulation and action as a unit. Fun.
7. Star Gazer	Good posture for the day. Moulding the man into an attitude of power.	Adjustment of the muscles to their final best position for the day's work. Chest raising, abdominal wall solidifying, complete assembling of body forces.

BEFORE BEGINNING

"Don't start anything you can't finish!" Daily morning exercise is not an isolated event,—it is a habit. In order to acquire a habit it is first necessary to become thoroughly convinced that it is worth while. It is therefore wise to consider the profit to be gained and the cost;

to offset the gain in length of years, the zest in living, sense of power and the abolition of weakness, pain and insecurity, against the discomfort of effort in the cold grey dawn and the loss of a few moments of luxurious bed comfort. *Will it pay?* If so, will you do it? Don't start today. Review the matter for three days. If your determination remains undiminished, then begin! If you weaken in these three days you would have weakened in any event and nothing is lost.

Profit	*Cost*
Every Day	*Every day*
1. Vim	1. Ten minutes
2. Zest	2. One less turn-over nap
3. Appetite	3. A few ounces of determined effort
4. Less Worry	
5. Better sleep	
6. Stronger Determination	
7. Stabilized Outlook on Life	
8. Sense of Power and Well-Being	
9. Less Chance of High Blood Pressure	
10. Greater Capacity for Enjoyment of Life	
11. Feeling of Ability to Drive instead of Being Driven	
12. *Longer Life and More in it*	

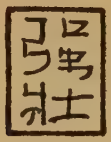
What is the decision?

THE NIGHT BEFORE

1. Study the exercises. It is no time to stop to read them when you should be doing them.

2. Arrange to be awakened fifteen minutes before the usual time, whether by valet, maid or alarm clock, and make a mental picture of yourself starting the first exercise.
3. Open the windows and go to sleep.

Even if you have only two hours to sleep, remember that the exercise will refresh you as much as another turn-over nap.

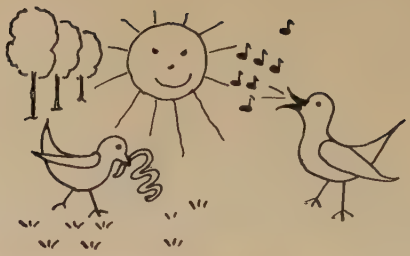


CHAPTER IV

EXERCISES

THE AWAKENING INSPIRATION
PUMPING (CIRCULATION MASSAGE)
THE KICK-UP
CHURNING (KUNDALANI)
THE TICKLE TOE
THE AEROPLANE EXERCISE
THE SIDE ROCKER
PEP HOPS
THE STAR GAZER

1st EXERCISE.



DESCRIPTION

1. Place hands on shoulde
2. Fists tight.
3. Take a deep breath, li ing the chest. Push t head back.
4. Bend the body to t right. Stretch the l arm up. Right arm o and
5. S-T-R-E-T-C-H.
6. Twisting the body abo
7. Straightening out t arm and finally letti the breath go as t stretch comes to end.
8. REPEAT once m bending to the left.

THE AWAKENING INSPIRATION

DIRECTIONS

is is a *Natural Stretch*.

entifically started and ified reinforced, ex- what Nature would us do on waking. So enjoy a good long- n-out

R-E-E-E-T-T-C-C-H !

t the head way back, g deep breath: feel stretching impulse, twist and bend, get- the whole body into wn to the toes.

wn and grunt all you to,—the more the r.

st a moment, taking uple of comfortable hs, then take another long stretch, twisting e other side.

t only *one* more.

en start the next exer- AT ONCE.

PUMPING

UP

DESCRIPTION

Lie free and easy without tenseness.

1–2–3–4–5–6

First six counts: Make the chest *Big*, pulling up letting the abdomen become hollow.

DOWN

7–8

Seventh and eighth counts Make the chest small, pushing down, making the abdomen large.

Repeat—three times (five times) without breathing Then: Take three slow long breaths.

Then take another three times (five times) till you have done fifteen (twenty five) in all.

CIRCULATION MASSAGE

UP

DOWN

EXPLANATION

3-4-5-6

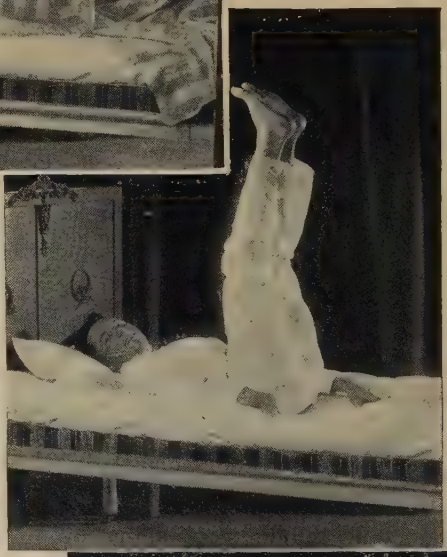
his is a *see-saw* movement.

he chest lifts while the men falls. It is also a *ving* movement. When chest gets big it sucks he abdominal wall and e chest goes down the hragm makes the abdo- bulge.

he spine must always lie on the bed. Arching hest by lifting the back he bed is wrong.

o not breathe while you pumping. It diminishes effect on the circulation.

op after three times breathe. Gradually in- se until you do five times hout stopping. Do from en to twenty-five in all.



Description

Lying on the back in bed after pumping.

1. Raise right knee to chest.

KICK the bedclothes over the foot of the bed—one kick.

2. Left knee to chest.

KICK the rest of the bedclothes over the footboard.

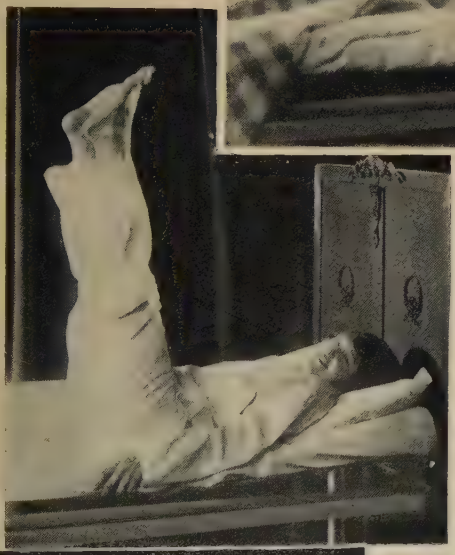
3. Raise both legs up straight.

4. Let them fall over the side of the bed and

SIT UP

and say Hello to the World!

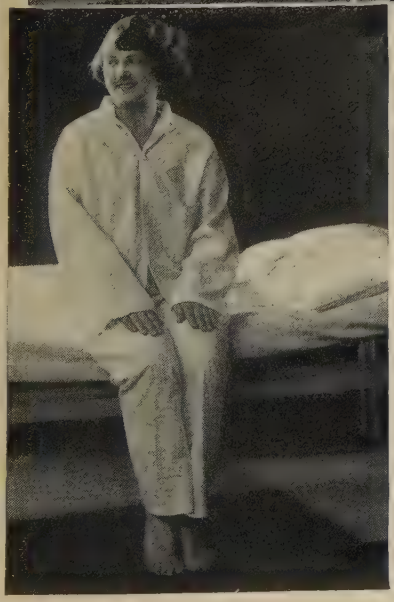
THE KICK-UP



Explanation

This is the real wake-up,—the proof that you are alive (and kicking).

Put some energy into it. If you wish to kick a few more kicks after the air has been cleared of flying covers, do so—half a dozen is enough.



Then give a whirl and sit up.

You will find yourself on the side of the bed.

4th EXERCISE.

CHURNING

This exercise is hardest to learn and easiest to do. Sit down in front of a mirror. Put on a belt with the buckle in front, in its regular place. Tie a string to a bottle or a jacknife and hang it from the chandelier. Sit directly underneath it. The trick is to make a big circle with the belt buckle while the head keeps directly under the jackknife.

Begin by practicing the front and back movement only. It is the diameter of the circle you eventually will make. First crumple down, then straighten up—keeping your head where it belongs and making the buckle travel at least six inches forward and back. Have you got it?

Now practice the side to side movement. Simply move the belt buckle to the right making a bow of the body while you keep the head under the string. This raises the other hip till it almost touches the elbow. Now move the belt buckle back to the other side bowing the body to the left. Practice till you get a good free movement.

KUNDALANI

When you have learned the circle to the right, try it in the opposite direction.

Ten times each way is good. Twenty is better.

Now you are ready to try the whole circular movement. Start in front belt buckle forward and curve to the right side on your way to the back. You make a semi-circle.

Continue

your way around coming forward by way of the left side—and you have completed your circle and are sitting up straight again You have learned the movement. Do it again and again until you make large, slow, perfect circles without any angles or bumps and be especially careful to keep the head in place.

5th EXERCISE.

THE TICKLE TOE

1. Spread the feet apart 24 inches. Stretch the arms sideward just a little higher than the shoulders. Now swing the arms around with a sailing motion twisting the body to the right. See the picture of the young woman on the opposite page. She is on her way but will go much further.

Twist as far as you can. Keep trunk erect.

Keep the arms on the level.

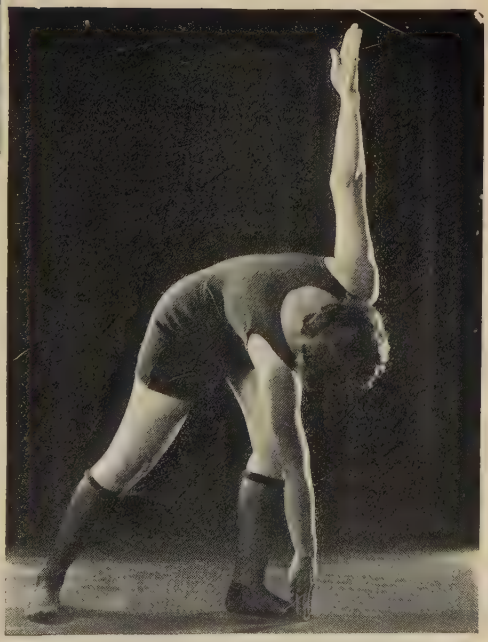
2. When you have gone back as far as you can, start to swing forward: twist the body to the left in the same way you did to the right and swing as far as you can in the opposite direction till the other arm is now straight back.
You have now made two twisting swings to right and left and you are ready to swoop down and tickle the toe.

THE AEROPLANE EXERCISE

SWING SWING TOUCH is the Rhythm

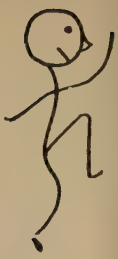
1. Take the left hand from the toe and swing it up and back to the place it just came from.
2. Sail to the right at shoulder level—way back with the right hand.
3. Next—take the *rear* hand and swing it forward and down in a great circle to left toe. You see you did a SWING SWING TOUCH again. Now sail along for ten or twelve times.

3. Here is where you must not go wrong. Get your eye on the hand that is back of you. *That* is the one.
   Swing it forward and down in a great circle in front of the body to the opposite toe (the right).
   Now you have sailed along through three counts and landed on the right big toe. Next you are going to take three more and get to the left one.



6th EXERCISE.

THE SIDE ROCKER



Take two hops on the right foot just as if you were saying one! two! with the foot itself At the same time lift the other leg up at the side.

Then

Take two hops on the left foot, swinging the right leg up to the other side. Repeat, rocking back and forth from side to side. Twenty-four to 36 hops is enough.

(Try it with only one hop.)

PEP HOPS

Hop on the left foot 8 counts.

1 2 3 4 5 6 7 8

Then hop left four counts

1 2 3 4

Next hop left two counts

1–2

Then run four counts

1

3

and stop on

Then hop on the right foot 8 counts.

1 2 3 4 5 6 7 8

and hop right four counts.

1 2 3 4

and the same on the right.

1–2

2

4

Finish with a flourish—once or twice is enough. Do stunts with the leg you are not using for the hops.

7th EXERCISE.

THE STAR GAZER

Clasp the hands behind the head, not the neck, and pull the head forward on count one.

On two head front

On three look up.

On four push the head back as far as you can look up and try to look at the back of your neck.

Hold this position for four more slow counts with the chest high. Take two good long breaths and repeat slowly three times and you have completed your morning exercise.

EXERCISE 7.

Exercise in the uplifted position will help to make it permanent. Instead of merely holding the upward looking position for the last four counts of the eight, twist the head from side to side letting it turn in the clasped hands.

Or, still holding the head back and facing the sky, bend the trunk a little from side to side four times to finish your eight counts.

Feel the uplift in the head, neck, chest, back and throughout the whole body, and keep it during the day.

CHAPTER V

HOW THE CAVE MAN WOKE UP

EXERCISE ONE

CONTENTS

HOW AB SLEPT AND AWOKE
WHEN THE ALARM CLOCK RINGS
RESULTS OF THE STRETCH
MECHANICAL EFFECTS OF MUSCULAR CONTRACTION
WHAT IS IN A GOOD STRETCH
SCIENTIFIC STRETCH-LIKE EXERCISES
THE AIR PUSH
THE SKY LIFT

CHAPTER V

HOW THE CAVE MAN WOKE UP

When Ab, the chief of the Stone Hatchet Clan, crawled into his new cave he found it cold; fire had not yet been domesticated. He was weary with the eviction proceedings which he had conducted personally with great success at the expense of the previous tenant. Though he had a few wounds and bruises to nurse, as he looked the cave over, noted its spaciousness and the convenient narrow opening which could be securely barricaded from the inside, he counted it a good day's work. He barked his own private call and his wives, retainers and children slid down from trees and other points of vantage where they had witnessed the battle aforementioned.

The cave was good, but like most old-fashioned apartments, it had no heat, and winter had just begun. It was cold, but they slept huddled together and each in a position which made every bit of personal warmth serve its owner rather than the atmosphere.

Look at Ab in dignified aloofness near the door! His chin resting upon his updrawn knees, his arms clasping the lower legs, he made himself as nearly as possible into a round ball, the whole front of the body in contact with the thighs, and the thighs in contact with each other. This is the racially old position of sleep. The body grew to adapt itself to it.

Often our ancestors were huddled out in the rain and the water ran down the shoulders and forearms and dripped off the elbows. Thus the hair grew in a natural thatch to shed the water toward the elbow and from the knee, as perfect a mackintosh as the back of a duck.

In the morning Ab woke up. All night long the muscles of his neck and back had been stretched, while the muscles of his chest and abdomen and the whole front part of the body had been shortened. The chest was cramped. He opened his eyes, glanced over his new home and his sleeping clan, lifted his head, raised his chest, took a long breath, stretched one arm up, curved his back, stretched out one huge leg, then the other and yawned a great, satisfactory, thunderous yawn, just as you and I would do. For a moment or two he settled back luxuriously, closed his eyes, opened them again and the impulse to stretch came. Another long breath, a series of contractions and stretches, again a huge bellow of satisfaction. He grasped his club, jumped to his feet—Ab was himself again.

This is the way to wake up. Countless generations of our early human ancestors fell into this natural way of

reassembling their energies from the arms of sleep. Nature, the great practical scientist, taught them. She is a hard school mistress who teaches by the process of elimination, permitting only the successes to graduate and perpetuate their kind, to teach their children her lessons, and *this* is one of nature's lessons. It is one of these mysterious life ways at which the wise men of the East marvelled but the wise men of the West analyze, understand and teach to the men who are going to read this book.

For the wisdom which has been good for 100,000 years, and for reasons science has but recently revealed, we have taken the awakening inspiration, the natural stretch, as the first of our Seven Morning Exercises. It has been proved by the race, by nature, and by the biologist, in the laboratory, therefore it is good for you and you will like it. It is probably the only exercise that fifty million people in the United States take daily. If we could look into their homes as seven o'clock rolls across the continent, we would see this daily awakening.

At the baseball game twenty thousand men will stand at the beginning of the seventh inning and as if on command yawn and stretch for exactly the same reasons that Ab and you and I do when we get up in the morning.

WHEN THE ALARM CLOCK RINGS

"Oh, how I hate to get up in the morning!
Oh, how I'd like to remain in bed!"

When the alarm clock rings lie quiet for a minute and then start to wake up.

Place the hands on the shoulders, raise the chest, take a deep breath, push the head and elbows back, twist the body to the right, stretch the left arm up and stretch the right arm out. Give a good twist, writhe and wriggle and let go that good old yawn. If the windows rattle it is a good sign.

Rest a moment, take a few good comfortable breaths, put your hands on your shoulders again and get that impulse! Let nature take this exercise into her own hands. All you have to do is to start it and make it go good and strong and you get the results which you need and which we as scientific and practical men want you to get.

RESULTS OF THE STRETCH

All the muscles of the body have been immobile during the night. They have all been kept by the vital force in a quiet state of constant tension. Some muscles have been contracted, some have been stretched, but because they have been quiet, all of them have become slightly stagnant. If there is the slightest tendency to rheumatism real stiffness will occur. Nothing will clean these muscles of stagnant material so well as muscular contraction. Nothing will prepare them for the day's work except exercise. So, therefore, Nature gives us our first morning call for the yawn and stretch.

MECHANICAL EFFECTS OF MUSCULAR CONTRACTION

Now for a little science. Each muscle is composed of fibres laid alongside of each other. You have seen them in

beef-steak or better in corned beef. Take each one of these little bundles apart and you will see even smaller fibrils. Among these fibrils run minute blood vessels, arteries and veins and nerves as well. When the muscle contracts it squeezes all the little blood vessels and it squeezes its own fibrils too. When it relaxes, the blood again runs quickly through the vessels, filling them fuller than before. The next contraction squeezes more blood out of the vessels into the veins which take the blood away. The next contraction permits more blood to get in until a working muscle, Bainbridge, the English physiologist states, *contains eight times more blood than the muscle at rest.*

Muscular contraction, therefore, cleans out the muscle tissue, squeezing it just as we would squeeze the water out of a bathing suit by wringing it between the hands. Contraction makes more blood come into the muscle and increases its nutrition. The muscle is an automatic self-squeezing sponge. So this is what happens to all of the muscles of the body when we wake up properly. They are cleaned and tidied up for the day's work and a fresh, new supply of blood is given them.

We will have occasion to refer to this effect later. The seeker after good health in great abundance will remember the wonderful effects of muscular exercise on the muscles themselves, for these local effects exert powerful influences over the health and mechanical workings of the rest of the body.

WHAT IS IN A GOOD STRETCH

Nature is a good guide. There is none better. She has led the human race upward from the lowest levels of life to its present advanced state and if we are to go forward we must follow her broad path, but not too closely. While Nature's ways are best for the race by and large, she is wasteful and sometimes permits valuable individuals to perish. If they were wiser they might survive and their wisdom with them.

When we improve on Nature's methods they become habits and she adopts them. The awakening stretch, for instance, is full of hints for the constructive biological scientist. It has a series of beneficial effects which, secured at the threshold of the day, make it mentally and physically stronger and better and fill it with a greater abundance of health and efficiency.

Let us see what she is about. Analyze the stretch, pick it apart scientifically and then reinforce, emphasize and apply Nature's hints to our purpose. Science is only Nature using her brains. While the stretch contracts a large number of muscles, it emphasizes two sets which are of paramount importance, the *muscles of the neck* and the *muscles of the trunk*. These are the most important muscle groups of the whole body. Large arm muscles are out of date; a bulging biceps, the physical culturist's joy, is of use for the ordinary man only in magazines, movies and when displayed to the admiring feminine spectators on the beach.

The *neck muscles* hold up the head, straighten the cervical spine and also the upper part of the backbone to which the ribs are attached. The ribs are lifted; they in turn expand the chest and make it more effective as an organ of respiration. A high head and a straight back makes us feel more able and worth while. Every one instinctively recognizes the high head as a sign of pride and something to be proud of to back it up.

Nature, however, does not go far enough in her stretch. But we take her pattern and use it as a basis of our seven exercises which in effect are one diversified stretch.

The *trunk muscles*, particularly those of the abdomen, rival the cervical muscles in importance. They form the abdominal wall. If they are strong the man is self-contained, girded with strength, a solid unit of muscle and bone. If they are weak, he is slack, loose and flabby, his vital organs unprotected and insecurely supported. The foundations of life are weak. There is no unity.

In our first exercise, Nature's own stretch, these muscles give a preliminary contraction or two. We take the hint, develop the idea and introduce a vigorous exercise to get this result in greatest measure in Exercises 3 and 5. And what is more, in each exercise of the seven, these muscles are employed in a different way with the result that the seeker after good health in great abundance develops a powerful sheath for his vital organs as strong as flexible steel and as lithe as woven silk.

Organic Massage

In the stretch, the twisting of the body alternately squeezes and stretches the abdominal organs as the trunk is flexed and twisted. It provides a hint of natural massage, and massage for centuries has been a valuable method of stimulating organic action but particularly organs that are tired, lazy or that have been merely asleep. This is a tremendously valuable bit of the preparation for the day. So important is it that a whole exercise, No. 4, absolutely unique in character is devoted to this purpose and the principle will be found woven into four other exercises.

Circulation

While Nature in her wisdom gathers in all these advantages, perhaps the effect she desires the most is the powerful stimulus given the circulation by the natural stretch. This result is entirely unknown to the physical trainer who still thinks that exercise is for the muscles alone, and even to the scientific world, this result is comparatively new. It is caused by the raising of the ribs. This increases the size of the thorax and acts upon the circulation in such a way that the pools of blood which have collected quietly in the body reservoirs during the hours of the night are drawn up and thrown into the circulation. This effect is of tremendous value and is obtained in greatest measure by the use of the second exercise of the series which immediately follows the stretch.

Thus we get from the first exercise a contraction of the muscles in general, a definite emphasis on the neck and abdomen, a little organic massage and a preliminary stimulation of the circulation.

SCIENTIFIC STRETCH-LIKE EXERCISES

The effects of the stretch are so good in refreshing and straightening the body that we have sought other exercises that will produce the same results. In the course of many years of continuous study and experiment with the best possible exercises for the 800,000 children, young men and young women in the elementary, high and normal schools of New York City, I worked out a series of stretch-like exercises which have now come into general use. They are called "static" because a selected position is taken, held and emphasized while in ordinary exercise the arms, legs and trunk are usually moved. These Static Exercises are based upon the principle that a placing of the parts of the body in certain positions causes a psychological state which in turn produces a result upon other parts of the body. This fact can be observed constantly in daily life. For example, if an object is distasteful to us, our natural reaction is to place the palms of the hands toward it as if to prevent its approach, and instinctively from this position the head and body shrink away in an attitude of repulsion. This is outlined directly in the first exercise when the hands are bent back and the palms of the hands turned toward the ground and the repulsion

from the ground is turned into an upward lift of the whole body.

THE AIR PUSH

Stand Erect.

Bend the wrists back so the palms of the hands face the floor until you feel the strain in the forearms.

Press down on the air and at the same time,

Lift the chest, and the head—

Stand tall. Prick up the ears. Hold this position ten seconds.

Stay up in this elevated position while two deep breaths are taken when you allow the wrists to relax. Repeat three to seven times.

The most important part of this exercise is the lift that the head and chest get from the feeling of the "air push" on the palms of the hands. The purpose of the exercise is to obtain the benefits of the stretch in upright position. Therefore one must not slump down again when the wrists are relaxed. This exercise is one of the best ways of putting men, women and children in good posture and it forms the key to good posture training in the schools, for by its use children who have bad posture and do not know how to stand straight can be made to stand straight and to feel what good posture really is. This exercise can be used during the day at any time when one has been sitting still too long. The hands can be put down on either side of the chair and the wrists turned back and the chest raised without any one else being the wiser. It is an

invisible exercise. It can be used also while walking, where it is most valuable, for walking done in a slumped attitude does little good. The wrists are turned back, palms pressed down and the effect of raising and straightening the whole body is produced. This psychological association is deeply imbedded in the history of the race for exactly this kind of wrist position is found on bas reliefs of ancient Egypt. In dreams where the subconscious mind more fully sways, the sensation of floating through the air is associated with this position of the hands. This principle is found in the writings of certain Eastern philosophers where it is given a great esoteric significance. It has never before been applied to physical training or made available for the use of the general public.

THE SKY LIFT

The second application of this same principle, also used in developing the second static exercise is the "Sky Lift."

Stand Erect.

Raise the left arm straight over the head.

Stretch up as far as possible.

Bend the wrist, palm towards the head and keep on stretching upward.

Raise the other hand, bend the wrist and push up the left hand still higher, as far as possible toward the sky.

Hold this position for ten seconds while two deep breaths are taken.

As in the "Air Push" the effectiveness of this exercise results from the feeling of lifting which the upward stretching with bent wrists produces. It is especially important to feel that one is standing in the uplifted position while the arms are being lowered. If the body is allowed to come down while the arms come down the effect is quickly lost.

In applying these two exercises for use in schools and factories where they have a great usefulness, two-minute periods of relief exercises, the greatest care must be taken to hold the "uplift" position for at least five seconds and to utilize this time by urging the participants to "stand tall, lift high, stretch up, feel the lift of the hands, keep the wrists bent hard, feel the strain in the forearms," and when the exercise is over the command is given "*Stay up there* and let the arms relax," emphasizing vigorously the words "stay up there."

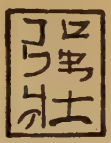
Of course it takes more than urging to make the children hold this good posture. It needs health, strength and vigor, but the first step is taken and the children know how it feels to stand well.

CONCLUSION

The stretch, our first exercise, is a gift of the ages to the men and women of today. It is the point of departure

for our building a series of exercises. It is full of hints for our science to develop and our wisdom to apply.

Two good stretches and you are ready for Exercise No. 2.



CHAPTER VI

INSPIRATION

EXERCISE TWO

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PHYSICAL BASIS OF BREATHING
ASPIRATION OF THORAX
PUMPING
THE CIRCULATION TONIC
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THE VACUUM CLEANER
DIAPHRAGMATIC EXERCISE
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ABDOMINAL BREATHING
PACKING
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CHAPTER VI

INSPIRATION

BABY'S FIRST BREATH

When the baby first sees the light of day his first important business is to take a deep full breath. He keeps on breathing all the rest of his days. The first breath is the eagerly looked-for sign of the real beginning of an independent life. It is the first in-bringing of the vital influences of the outside world into the life and person of the child. Ever afterward until the last breath is taken, there is an ebb and flow of the life-giving forces of the universe in rhythmic accord with the life-receiving and utilizing forces of the individual.

Deeply ingrained in the wise philosophies of the East is the understanding belief that there are seven great vital principles in the atmosphere, each the peculiar necessity of a perfect life and each the gracious gift of the All-Father to his children. With these philosophers deep breathing has been developed into an inspiring ceremony akin to

worship, the indrawing of the beauty and power of the Infinite. With them both the physical and spiritual meanings of the word inspiration have one significance.

For this reason alone the next exercise of our series is a scientific amplification of breathing, for as the life comes out of darkness for the labor of life's day, it may well bring itself wholly in harmony with the universe in which it is to play its part.

THE PHYSICAL BASIS OF BREATHING

The greater the importance of any human process, spiritual, mental or physical, the greater the importance of providing a sound physical basis therefor. Breathing is a physical act. It is a movement of the body that makes the air come into the chest. Strangely, the air cannot be forced into the lungs; it can only be invited in. The raising of the chest wall and the pulling down of the diaphragm merely serve to create a partial vacuum which the air rushes in to satisfy. If there is any obstruction in the nose, pharynx or throat from adenoids or other disease the air finds it difficult to enter and the body is unsatisfied. If there is no obstruction the air vesicles in the lungs expand until the chest falls again and the air returns once more to its source.

THE ASPIRATION OF THE THORAX

When the chest cavity is enlarged and the suction effect is created the pull of the vacuum is exerted not only

upon the air but also in a most important way upon the blood vessels that enter the chest. The heart is of course located between the lungs. It has great veins running to it from the neck from above and through the diaphragm from below. When the chest enlarges, the suction of the chest makes the blood in these veins run more rapidly from the head and abdomen, into the heart. The heart in turn pumps this greater supply of blood into the lungs where it meets at once the fresh supply of new air. In this way the lungs are filled with both air and blood and when the breath goes out the blood goes out faster too. Thus the chest acts as a blood pump as well as an air pump. It is continually, in sure, slow cadence, sucking the blood into itself and urging it on forward through the arteries.

This can easily be observed in the rise and fall of blood pressure in the arteries of the arm. It is lowest as the chest wall rises and retards the output of the heart and highest during the time when the chest is beginning its contraction. The blood pressure rises as the chest is being emptied.

Now it is beginning to be more clear why a deep long breath is taken when Nature wants to wake us up. It will be clearer still when we realize that the blood that is sucked into the chest comes from the abdominal cavity as well as the lower limbs. In the abdominal cavity surrounding the intestines there is a set of veins which are very elastic and capacious. They are called the splanchnic veins and their capacity is so great that the physiol-

ogist calls them "The Splanchnic Pool." This pool is where the blood sleeps. When we wake up in the morning and prepare for the day's work one of our first physiological duties is to call the blood from its sleeping place and put it to work circulating throughout the body, and to do this we have devised an exercise which, patterned after the natural form of breathing, reinforces and amplifies to the greatest degree its circulation-awakening effect.

PUMPING

This is the second exercise. It is called "Pumping," because it literally sucks the blood out of the splanchnic pool, the resting place of the blood, and drives it into the circulation. As we have seen ordinary breathing will do this somewhat. Certain types of forced breathing will do it more, but pumping does it better than any other form of exercise or breathing that we can discover or devise.

This exercise consists in lifting the chest wall and making the chest cavity as big as possible. Ordinarily this would result in the air rushing in, but in this exercise we prevent this by closing the mouth. This, therefore, doubles the pulling effect of the chest upon the blood and serves to drain the splanchnic pool much more rapidly and completely than does mere breathing. The diaphragm, instead of being pulled down as in ordinary breathing, is actually sucked up and the abdomen becomes

hollow as the chest is raised. All the contents of the abdomen are pulled by the diaphragm up toward the chest.

During the time that the upward "chest big" position is held, this great suction which is called *the aspiration of the thorax*, is taking place. This is the reason why the "chest big" position is held for six counts out of eight. It is because this position gives us the main effect of the exercise.

THE CIRCULATION TONIC

This is the simplest tonic that can be given to the heart and circulation. Ordinary exercise such as running will stimulate the heart and by increased respiration and muscular work it will squeeze the blood out of the abdominal pool. The circulation is stimulated but at the expense of considerable muscular labor and other organic work. Sometimes this stimulation of the whole body is desirable but, particularly when we are weak from illness or merely unawakened from a night's rest and still lying in bed, it is inappropriate. Pumping, therefore, is an inexpensive and effective circulation tonic costing little effort and producing the great effect of awaking the circulation and starting the day on a full head of steam.

Effect on the Lymphatic Circulation

Not only does the aspiration of the thorax stimulate circulation of the blood,—it stimulates the circulation of the lymph as well. The great lymph channels come from

the abdomen and pour into the circulation at the root of the neck. The suction of the chest literally pulls the lymph from all of the multitude of channels throughout the abdominal organs up into the chest and into the circulation. This is a kind of house-cleaning, an excellent thing with which to start the day, as any good housewife will agree.

THE VACUUM CLEANER

When the housekeeper wishes to get her house neat and clean she buys a vacuum sweeper which works on the same principle as the suction apparatus of the chest. If she can afford it she will buy one of the vacuum sweepers that not only suck up the dust but, by means of a special device, beat the fabric to be cleaned with a multitude of tiny little beatings. This is very much what pumping does to the abdominal organs. The suction takes place when the chest is made big. All the abdominal organs feel the pull and the suction, the liver and stomach rise with the diaphragm from two to four inches, and all the intestines that are not fixed follow suit. The rectum, uterus and bladder also feel the pull during the first six counts of the eight. On the next two counts, seven and eight, the chest is contracted and the abdomen expanded. This reverses the whole procedure, the diaphragm is contracted and it squeezes all the abdominal contents as hard as it can, bulging out the abdominal wall. This compresses each individual organ, a great change from

the previous suction. In this way each part of the vital machinery of the body is given a massage treatment, alternately squeezing and suction. It is a perfection of method for cleansing, stimulating and awakening. It is the greatest, most effective and simplest tonic that can be given to the body.

In addition to the push and pull effect of the suction and squeezing of the exercise, the organs are jostled against each other and are stimulated as if by the hand of a masseur. This effect is of such great importance and so excellent for the body that a whole exercise called "Churning" is later devoted to it. These two exercises, Pumping and Churning, are probably the most valuable exercises that are known to man, for although many exercises are necessary to keep the body in health (walking, for instance is one of the most valuable)—these two will come nearer to keeping one in health than any others. They not only are of tremendous value in keeping good health and developing it in greatest abundance but they also have a most beneficial effect in the cure of many diseases of the abdominal organs (constipation, dysmenorrhea). This is of course another story especially for the doctors.

DIAPHRAGMATIC EXERCISES

The most important single muscle of the body is the diaphragm, a much neglected muscle. A powerful diaphragm is worth ten pairs of biceps. This exercise is a direct and complete diaphragm exercise, for the bulging

of the abdominal wall is caused by the diaphragm alone.

The next most important muscles are those of the abdominal wall and neck. In addition to the splendid effect of pumping on the circulation and abdominal organs it has the added merit of strengthening and toning the abdominal wall. The muscles of the abdominal wall, however, are so important that certain of the succeeding exercises will be devoted almost entirely to their development.

This exercise, it will be noted, is almost unique in having its primary effect upon the internal organs and upon the circulation. By the use of a few muscles in a mild way, great effects upon the circulation and vital organs are obtained with a small expenditure of energy. This is one of the exercises which is good for everyone in normal health every day. It refutes the pernicious fad that is creeping into some pedagogical circles which urges the use of "natural exercises" only. Houses are better than caves, automobiles and aeroplanes are an improvement on running as a means of transportation. Carefully devised, scientific exercises are an improvement upon the movements that Nature has devised for purely utilitarian purposes.

SUGGESTIONS AND VARIATIONS

The Pumping exercise consists in raising the abdomen and chest alternately without raising the back from the bed. For some people who are not accustomed to exercise

or deep breathing it is difficult to learn. It will help the beginner to imagine that his chest and abdomen are a see-saw—when one comes up the other goes down. Making the chest big gives a sensation of pulling; making the abdomen big a sensation of pushing, and the idea of an alternate push and pull helps some beginners to get the correct motion.

Sometimes placing a book on the abdominal wall and lifting the chest and pulling in the abdomen until one can no longer see it, and on the second part of the movement pushing the book up as high as possible, will convey the right idea. The beginner should pay no attention to the breathing until he has learned the movement, then he will hold the breath and stop breathing while the exercise is taken. At first it should be done only three times and a rest for three full breaths taken. Afterward this can be increased to five times. The usual dose for the beginner is three times repeated with rests until fifteen times are done. The regular dose is five times five.

If it is desired to increase the strength of the diaphragm a weight can be placed on the abdomen, preferably a sandbag or a bag of shot. This will increase the effect upon the abdominal organs and help to develop the diaphragm. It is not recommended for a beginner and should not be undertaken until a physician has gone over the abdomen to see that it will do no harm. Some enthusiasts use a twenty-pound sandbag on the abdomen and some have gone so far as to develop both the diaphragm and

abdominal wall so that they can safely permit a full-grown man to balance himself on the abdomen. This is overdoing it and for most people it would be dangerous. Nevertheless, I would rather see these muscles developed than merely the muscles of the arms and legs.

It should be remembered that the part of the exercise which is most effective on the circulation is the pulling up which emphasizes the aspiration of the thorax. Pushing down ordinarily should not be emphasized. Especially should one be cautious in pushing down too hard on an abdominal wall that is weak.

This exercise can be done in different positions; in fact the writer first introduced it in a standing position with the hands on the knees. It can be used also in the knee chest position and on all fours, both of which have peculiar advantages for use in the treatment of various abdominal disorders under the advice of a physician. It is very like an exercise presented by Dr. Clelia Mosher of Leland Stanford University and recommended for constipation and dysmenorrhea.

BREATHING EXERCISES

There are over seventeen useful varieties of breathing exercises which the well equipped physical training teacher should know how to use. There are many other varieties of breathing which have been "invented" from time to time. The most useful of these are as follows:

1. Abdominal Breathing

It is not necessary to lift the ribs at all in taking a moderate breath. The diaphragm which forms the dome-like roof of the abdomen will, when contracted, increase the size of the chest materially and a good breath can be taken. Complete breathing of course consists not only in lowering the diaphragm but also in raising and broadening the chest. Abdominal breathing should be complete breathing. The inspiration begins with pulling the diaphragm down and bulging out the abdomen. It continues by lifting the sides of the chest and finally the forward and upward chest wall. Expiration begins with the chest and ends with a contraction of the abdominal wall pressing the diaphragm upward. The diaphragm and the abdominal wall work in harmony with each other. When the diaphragm contracts the abdominal wall relaxes and bulges as a breath is taken in. When the breath is expelled it is pushed out by the contraction of the abdominal wall pressing on the abdominal organs which in turn push up the diaphragm. The diaphragm cannot push air out of the chest at all; it only transmits the push provided by the abdominal wall.

Abdominal breathing is worth while because of the massage that is given to the abdominal organs. By the to and fro movement of the diaphragm and abdominal muscles it forms a useful method of abdominal massage which is one of the effects of Pumping, where it is obtained in greater degree. It also strengthens both the diaphragm

and the abdominal muscles. This is one of the most valuable kinds of breathing.

2. Packing

Packing is taking a deep breath by little steps. The lungs are emptied as completely as possible and then filled again by six to twelve sniffs, each sniff packing in a little more air until the chest is filled to the utmost. The expiration may be normal and smooth or the air can be sent out in little puffs. The proportion of sniffs to puffs should be three to two. The value of this breathing is mainly in the massage which is given to the chest, diaphragm and abdominal wall. This we have seen is of very considerable value. Packing forms one of the most interesting kinds of breathing and it deserves a greater popularity than it has hitherto enjoyed.

3. Reversed Breathing

It will be recalled that the Pumping exercise increased the pulling effect of the chest upon the sleeping place of the blood in the abdomen, the great splanchnic pool, and exerted a far greater sucking effect on the abdominal organs than ordinary breathing, even in its most vigorous form.

There is a peculiar form of breathing which is very difficult to learn but when it is well done produces a somewhat greater suction on the abdomen. I call it "Reversed Breathing." It is best learned as follows:

Position: Kneeling on the floor, sitting back on the heels with the hands on the knees.

1. Take the breath *in* slowly and at the same time bend forward bringing the head down as close to the knees as possible. This is exactly opposite to the ordinary form of breathing where the head and chest are lifted on inspiration.

2. As soon as the maximum amount of air is in the lungs there is a slight pause, then the head and chest are slowly lifted, the body is gradually raised and the breath is sent out between the closed teeth with a hissing sound. The body continues to rise, the chest to be lifted as long as the breath lasts. At the same time the hands are slowly lifted from the knees with the thumbs turned out and the fingers turned directly backward close to the side.

This movement produces the maximum thoracic aspiration. It is patterned after a movement which has been used in all probability for many centuries by the philosophers of the East who sought to discipline the body and to make it a perfect residence for the divine spirit.

CONCLUSION

Thus there has been presented the second exercise of our daily series. It has been devised to gain one of the great beneficial effects of a natural exercise in a far greater measure than Nature herself could provide. It is the

result of many years of research and experiment and is presented to the public here for the first time with the confident expectation that it will be an efficient aid to the seeker for good health in great abundance.

TESTS

MEASUREMENTS AND RATIO

A splendid-looking man came into the office for an examination. He had a big chest which at first sight appeared strong and able. I put the tape measure around it and asked him to take a full breath. The abdomen bulged a little, the chest hardly moved. He had an expansion of one-half an inch and a chest of forty-four inches!

It was frozen stiff. He had not used it for breathing. Its solidity was only a sign of deficiency. His chest was not an organ of respiration at all. What little breathing he did was accomplished by the diaphragm.

Good vitality needs the support of a mobile chest. It should have an expansion equal to ten per cent of its girth when contracted as a minimum. Ten per cent of the girth expanded is all the ordinary man or woman needs. Take out a tape measure and run it around the chest just below the pectoral muscles if you are a man and just above the breasts if you are a woman. If your chest measures thirty-five inches (contracted) it should measure thirty-eight and a half inches expanded. If it measures forty inches contracted it should measure forty-

four inches expanded. If it doesn't, practise the exercises in this chapter and use the chest for good legitimate breathing in vigorous exercise until you bring it up to the standard.

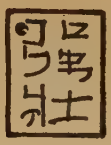
CHEST ABDOMEN RATIO

A weakness is shown when the abdominal organs slump down and bulge the abdomen outward. This usually pulls down the chest and makes it smaller. This occurs in weak, little children, weak boys and girls and in weak, fat men and women.

Measure the chest as directed in the chest mobility test above. Then put the tape around the waist just over the umbilicus and pull the abdomen in, making the waist as small as you can, giving yourself the benefit of every possible advantage. The chest expanded should be greater than the abdomen contracted. The best proportion is five to four. A forty inch chest should have a thirty-two inch waist; forty-five inch chest, thirty-six inch waist. Make your own measurements and calculations and see to it that you keep this proportion what it should be.

Of course, if you have a five to four ratio it doesn't mean that you don't let the abdomen hang loose and slump down when you are not watching it. It does, however, carry the assurance that you are able to achieve a high chest and a slim waist if you develop abdominal muscle enough to keep it there. All you have to do is to get

mobility with the exercises of this chapter and then get the strength of muscle required by the use of the exercises which follow.



CHAPTER VII

HOW MANY SIDES HAS A BED?

EXERCISE THREE

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CHAPTER VII

HOW MANY SIDES HAS A BED?

Count them.

The practical furniture manufacturer says two, the right side and the left side, and we cannot prove that he is entirely wrong, but like most merely practical people he doesn't go far enough.

When I was a boy and came down to breakfast all worn out with the daily struggle to get my teeth brushed, my hair parted, my shoes shined, and my big nickel watch wound up, with nothing but breakfast to eat, my grandmother would say, if I showed any signs of strain in my usually bright, sunny disposition, "Well, boy, I guess you got out on the wrong side of the bed this morning." So there are two more sides to a bed, a right side and a wrong side.

This cannot be denied. I have had experience and no doubt you have also. Experience is a good teacher and what I have learned has been incorporated in this book

which might have been given the sub-title "A Practical Treatise on Getting Out of the Right Side of the Bed."

The whole success of the procedure depends upon the recognition of the fact that there are two more sides to the bed, just as sure as possibly can be. There is the warm, comfortable, cosy inside of the bed and the cold, unattractive, workaday outside of the bed. The difference between the two is enormous. There is no comparison. It takes an alarm clock, two or three wifely summons, and the urgent prodding of necessity to drag us outside the bed.

THE KICK-UP

The "Kick-Up" method avoids all this struggle. It is quite unnecessary to get out of bed. All we have to do is to bring the outside of the bed to the inside. They become one and then getting up requires no effort. In fact, after this exercise is over getting up becomes the logical, attractive thing to do, for the comfortable inside of the bed has disappeared and we are up and in the world of get-busy-and-go-to-it.

This is where the present-day systems of daily morning exercise fail to establish the daily habit and fade away even when they are accompanied by the stimulating strains of the phonograph. They assume that a man is out of bed, standing in the middle of the room in his pyjamas with a happy smile on his face. Far from it. He is right where he was all night snug and cosy inside the bed. In the many years of my experience I have found

that even the best of exercises have very little effect when they are not done. For this reason every one of the seven exercises is the natural thing to do and leads naturally to the next in order and, frankly, the first big purpose of the Kick-Up is to get you up and out of bed. It's necessary.

HOW TO DO THE EXERCISE

The Kick-Up can be done in four seconds or less, one for the right leg kick, one for the left kick, a third for lifting the legs together and a fourth and last second for throwing them over the side of the bed and letting them lift you up to the sitting position.

It should be quick, snappy and decisive. To the experienced it is nothing to send the bedclothes flying well over the footboard at the first kick, half way across the room, leaving the left leg to kick defiantly at nothing but the atmosphere. (I presume you sleep alone. If not, a little team work is desirable.) See how far you can kick them. Go on kicking after you have kicked them off. Kick a half dozen times or more. It is a good way to get rid of the comfortable weight of the night's sleep. It is a fighting, defiant action, a splendid thing to gird the soul for a vigorous go-ahead day. Life today is just as full of fighting as it was when the hungry dinosaurs and the sabre-toothed tigers were prowling around our own primitive lairs. Some men, like some of the lower animals are most dangerous when flat on their backs. Members of the wildcat tribe, for instance, when threatened, turn

over on their backs and present to the enemy an array of teeth and four vigorous legs armed with sharp claws, each leg tingling with power and danger to the enemy.

As we awake in the morning the first enemy we have to overcome is the slothful, comfortable encumbrance of the bedclothes, and our best defensive reaction to the confining weight of ease should be a vigorous kick which will send all comfortable handicaps to the wind.

This disposes of the bedclothes. Next, raise both feet to the zenith, pointing the toes gracefully if you like, and let the legs fall over the side of the bed. (This is the "right" side of the bed, of course.) Then let Nature take its course. As the feet strike the floor you find yourself sitting on the edge of the bed looking the world right square in the eye and ready for anything that dares to oppose you.

RESULTS OF THE KICK-UP

Of course the main purpose of this exercise is to get you up, and it does its task neatly and with dispatch. It has other values quite as important. The leg raising squeezes the abdominal contents and helps to reinforce the circulatory stimulation which has been started previously by Pumping. The compression of the abdomen also helps abdominal organic massage and the psychic effect of kicking stimulates a feeling of aggressive attack which is a good frame of mind for the early hour.

These exercises, simple as they may seem, are the sim-

plest forms of a group of the best exercises that can possibly be given for the strengthening and training of the muscles of the abdominal wall.

ABDOMINAL EXERCISES IN THE HORIZONTAL POSITION

Man naturally stands upright, but gravity is continually pulling him down. As a baby he crawls on the floor on all fours in the old biological position. As he takes his place as an active worker in the world he stands up straight. If he has strength and good vitality the head will be held high, the chest up, the back will be straight, and the abdomen flat and strong, but let age, laziness or disease undermine strength,—the head droops, the chest flattens, the abdomen bulges, and all the organs of the body—heart, liver, intestines, slump down and forward. The fatal mistake that is made by many teachers of physical training is to confine their exercises to the standing position. In this position even exercises of the trunk have to overcome the weight of gravity. To reduce the waist line the abdominal contents must be lifted. Enter any gymnasium, athletic club, or school where these exercises are taken and you will see arms moving and trunks bending but abdomens still bulging. This is especially unfortunate because one of the most important principles in the intelligent use of exercise is as follows: "*The body and its various parts tend to remain in the positions in which they are exercised.*" Abdominal exercises taken lying on the back have the advantage of not being required to work

against the force of gravity, in trying to push the abdominal organs up into their proper places. Thus the exercise loses none of its effect.

This fact can be applied to putting on corsets when the abdomen is weak and bulging. We often recommend that they should be put on lying down. When we wish to develop the natural corsets of the body, the muscles of the abdominal wall, in most cases it is advisable to do many of our exercises on the back. These muscles are so important that the whole series is largely concerned with them. The seeker after good health will do well to adopt for his own use several of the exercises of this type and will extend the four seconds of the daily Kick-Up a minute or more. If he has an abdominal wall that is weak like most other people in civilized communities, he cannot do better than devote two or three minutes out of the fourteen hundred and forty minutes in a day to this purpose. The seeker after good health in great abundance will train the abdominal wall to unusual strength.

Other exercises taken standing up will be used later to reinforce the standing up position to which man is entitled if he really deserves to be called a man. They will be considered later in Chapter IX.

ADDITIONAL EXERCISES IN THE HORIZONTAL POSITION

Exercise No. 1. *Knee Raising Triad.*
Position: Lying on the back.

1. Raise the right knee until it touches the chest and

at the same time grasp it with the hands and press it into the body.

2. Stretch the leg back to its original position.
3. Do the same with the left leg.
4. Return left leg to position.
5. Bring both knees to the chest together.
6. Return legs to position.
7. Breathe out.
8. Breathe in.

Repeat 4 to 16 times slowly.

Action

This exercise stimulates the circulation, massages the abdomen and strengthens the abdominal muscles, the rectus abdominis especially. It is a simple, elementary exercise and when done slowly, eight counts to five seconds, it does not arouse much heart action.

Values

This is one of the most useful exercises for every day. The pressure upon the abdomen by the knee and thigh gives a most effective abdominal massage. Fat collects on the abdomen as vitality ebbs away. This exercise will prevent the collection of fat by actual pressure, by stimulating the tissues to churn up the fat and by stimulating the internal organs to greater vitality. It is an excellent exercise to preserve the youthful figure because its effects are not only local but organic. It is an excellent exercise for constipation, the great bane of civilized life. The

pressure of the thigh is exerted first upon the beginning of the large intestine, the cæcum, located in the right lower corner of the abdomen. From the cæcum the intestine runs upward and for this reason the contents of the bowel are likely to collect at this point and constipation results. At the same time this lazy mass lies directly on top of the appendix which suffers from the pressure. This is one of the most fruitful causes of appendicitis. The thigh squeezes the contents of the cæcum up into the colon and dislodges a menace to health.

On the left side of the abdomen there is a similar place in the intestines where the contents often become lodged. This is the sigmoid flexure which just precedes the rectum. This portion of the bowel is S-shaped and is likely to become partially kinked, stopping the onward movement of the intestinal contents. The impact of the left thigh on the sigmoid flexure mechanically squeezes the bowel and stimulates its movement.

THE SIGMOID APPENDIX SPECIAL

The intestinal stimulation effect of this exercise can be increased by placing the left hand clenched into a fist over the lower right hand corner of the abdomen, just over McBurney's point, the guide to the location of the appendix. When the right thigh comes up it will make the effect very much greater. When the left knee is raised the right fist should be inserted in the same manner, very much as a nut is put into a nutcracker.

At this point it is wise to take counsel of your physician. If the appendix has an old abscess left over from a previous attack this exercise might be dangerous and if in the sigmoid flexure on the other side there are old ulcerations or if there are any ovarian complications of an inflammatory nature, harm might result. Of course, if you have been gone over by your health doctor and he gives you a periodical examination, you are safe and can go ahead and get great benefits that will come from a constant practice of Knee Raising.

Uses

Knee Raising can be put in the morning series. It should be done slowly. The whole triad, right, left and double, should consume from five to ten seconds. Sufficient time should be taken to grasp the knee and press it well into the body, for this is the effective element of the exercise. The triad should be repeated from four to sixteen times depending upon your strength and the amount of other similar exercise taken. This exercise is one of the great life-prolongers, and happy is the person who makes good use of it.

LEG RAISING TRIAD

Position: Lying on the back.

1. Right leg up. Leg is raised straight until toes point to the sky.
2. Right leg down.

3. Left leg up.
4. " " down.
5. Both legs up.
6. " " down.
7. Breathe out.
8. Breathe in.

Action

This exercise has the same effects as the Knee Raising Triad, but in different proportion. The muscles of the abdomen are called into far more vigorous play while the abdominal compression is very much less.

The chief muscle used in this movement is the rectus abdominis, the muscle which forms the front pillar of the abdomen. It is attached to the breast bone above and to the pubis below. It is a double muscle with a right and left side, of curious structure because it is crossed three or four times in its length by tendonous bands between which the muscle bulges. A well developed rectus abdominis bulges under the skin like a double row of apples strung on two strings.

This is one of the great protective muscles of the body. Corbett, who was the great heavy-weight champion boxer of the world, during his fight with Fitzsimmons left his abdomen unguarded for a tenth of a second and at the same time allowed the rectus to relax. Fitzsimmons at the same instant planted a terrific blow which, instead of rebounding from taut, hard muscles, sank into the abdomen, paralyzing the solar plexus, and Corbett was counted out.

Putting time into the training of a good strong rectus abdominis is like putting money into the bank. It is useful against the rainy day of accident, disease and old age.

Uses

This exercise should be done slowly. A full dose would consist of going through a triad twenty times. A good deal of muscle is employed in this exercise and the stimulation of the heart is considerable. It should not be done to the point of fatigue. In fact, this exercise can easily be overdone. The best way is to do it five times and then relax for fifteen seconds and repeat. The tensing of the rectus abdominis when the legs are raised also pulls actively on the chest and impedes breathing. This fact should not be lost sight of.

For this reason this exercise should not be used except in extreme moderation by those who have weak hearts. It is important to distinguish, however, between hearts that are really weak and hearts that are merely irritable from untrained nerves and general weakness. For the former there is danger,—for the latter this is one of the best possible exercises and here the health doctor can render valuable aid.

TESTS OF THE RECTUS ABDOMINIS

One of the most popular instruments in my office is the machine which tests the grip. Everyone wants to know how strong he is and tries to make the little hand climb

up higher and higher over the dial. A grip dynamometer will keep a dozen boys young or old interested for a full half-hour.

But the abdominal wall is far more important than the flexor muscles of the forearm which make the grip. There are four tests of graduated severity.

TEST NO. 1. TOE TOUCHING

Stand erect. Without bending the knees lean over and touch the toes.

This is easy unless you happen to have a stiff back or a fat stomach. It is the most popular test of the untrained man. They think it is something of a feat: it is only child's play and should get only 25% out of 100%. As an exercise it amounts to almost nothing at all and I fear this will be sad news to people who do it religiously twenty times a day and pride themselves on it.

TEST NO. 2. THE SIT UP

Lie on the back. Sit up and touch the toes without bending the knees. It is allowable to have someone hold the feet down or to stick them under a heavy chair or bedstead.

This is beginning to be a real test. It not only requires some flexibility and the complete absence of a "tummy" for the rectus abdominis must actually lift up the whole weight of the upper trunk. To do this successfully entitles one to a rating of 50%. It is a good exercise. If

you want to make it harder put the hands behind the neck. Still harder, stretch them out over the head.

TEST NO. 3. THE TOUCHBACK

Lie flat on the back with the hands at the sides. Raise the legs together to the vertical and keep on going until they touch the floor behind the head.

This is harder to do than Test No. 2 for it means a more complete contraction of the abdominal wall and a more complete compression of the whole trunk. Seventy-five per cent will be given you if you can do this.

TEST NO. 4. THE "L"

This test consists in making the trunk and legs form the two arms of an "L." The easiest way is to sit in an armchair, place the hands on the arms, lift the body until you are sitting on the air. Then raise the legs straight forward until they are perfectly horizontal and at right angles to the body. It is not hard to do this for a second or so but it requires muscle to hold the position for ten seconds, perfectly still without a quiver and with the toes neatly pointed and touching. For every second you hold the legs thus you get 10% and ten seconds will give you 100%.

This is an excellent test. It should not be used as an exercise, however, because of the compression of the chest. It is used a great deal in gymnastic contests as one of the elements in feats of gymnastic skill and strength. In the

country you can practise this same exercise hanging from the limb of a tree and, if you really wish to do something difficult, raise the legs to the "L" position, then continue them upward until you touch the toes to the limb. Continue lifting the body, sliding the legs upward until they cross the limb and you are up above it with the feet down, head up and the limb across your thighs. This is called "circling the bar" and anyone who can do it is beyond doubt in possession of an abdominal wall strong enough for all contingencies.

Put yourself through these tests and see how nearly you can come to 100%. Any man should reach 90% or be ashamed of himself. Any woman should do the third test and reach 70% or the "L" unless she is hopelessly fat, a virtual invalid or over seventy years of age. These tests will not injure you unless you try them too hard and too long.

THE CROSS OVER

Position: Lying on the back with the arms stretched out at the sides at right angles to the body.

1. Lift the right leg upward and cross it over to the opposite side until the toes touch the left hand. Try to keep the shoulders on the ground and the arms in exactly the same right angled position.
2. Return foot to place.
3. Raise left leg and touch left foot to right hand.
4. Right foot in place.

Action

This exercise has a great many of the benefits of both Knee Raising and Leg Raising. It has abdominal compression and massage of the large intestine with the training of the muscular walls as well. Its additional contributions lie in the fact that it twists the trunk and squeezes the abdominal contents very much as the old-fashioned washerwoman used to wring the clothes by twisting them in her hands. When the right leg crosses all the way over to the left side the right side is squeezed and the left stretched. This is reversed on the next two counts. All of the benefits of organic massage are obtained.

In addition there is a splendid effect on the spine. All of the little bones which form it are twisted on each other, first this way and then that, an effect which Nature tries to get in her everyday ordinary stretch. A prominent gynecologist told me the other day that he thought 180% of the women suffered from backache because most of them have backaches in two or more places. Most backaches, of course, have their origin outside of the spine. The spine itself is only the poor victim of reflected pain. While we cannot cure an organic condition by spinal massage, we can make the spine rejoice by a well executed series of auto-massage movements. This exercise (and others which will follow later) constitutes a self-applied semi-chiropractic treatment which has helped to take many spines out of a discontented state and make them happy again.

Where the spine is attached to the pelvis there are two

joints, the sacro-iliac joints, which frequently become jammed and painful. The rolling motion of the pelvis incidental to the exercise gives them a great deal of motion and stimulation. This exercise is sometimes of great use in conditions of this kind.

Uses

The Cross Over is a good exercise to put into the daily regimen. It forms a good combination with the Knee Raising for it is a milder exercise than Leg Raising. It helps many cases of constipation, and under a physician's care it has given a great deal of relief and help in conditions of pelvic congestion.

It should be done at a moderate rate, one count to each second with a snappy kick to each movement. It should be repeated from eight to sixteen times.

THE BICYCLE

Position: Lying on the back, knees close to chest. Arms at the sides, left leg extended, right leg bent.

1. Imagine that you are riding a bicycle and make circles with the feet just as if you were pedalling upside down. Keep the knees close together and every time the foot comes up see that the knee strikes the chest. Make the circles about two feet in diameter.

Values

This is a great abdominal auto-massage. The internal organs are thumped and pounded every time the thigh

strikes the abdomen and where the exercise is really well done the knee should strike the chest and produce the same result upon the heart and lungs. This causes the greatest stimulation of the intestines and makes this one of the best exercises for constipation. At the same time the muscles of the abdominal wall are held in a sort of contraction and are exercised at the same time, the best possible way to make them short and taut as well as strong.

This exercise is hard work. It is the most vigorous of any of the exercises hitherto described. For this reason those who are weak in any way should not do it except a very few times with frequent rests and under careful direction. It stimulates the circulation and forms an excellent physiological exercise. It will develop endurance but it must be remembered that in so doing it costs considerable effort which the body must be prepared to expend.

Uses

This exercise, if placed in the daily morning series, would only be used as a brief continuation of the Kick-Up. You may get on the bicycle and ride yourself right into a vigorous attack on the day's work but six to twelve times is enough. Let me repeat this: six to twelve times is enough. The danger of an exercise which is such fun as this one lies in the fact that people will do it too much and unfortunately some physical trainers encourage them. I have seen weak, anæmic men bicycling for all they were worth,

digging along as if they were actually on a bicycle and health and strength were just ahead and going too fast to be overtaken.

Good health cannot be pursued with such strained intensity. Exercise does its main good by stimulating repair and it does this by causing occasion for repair by the tearing down of muscular tissue. The bicycle exercise is as vigorous as running and it should be used with discretion. It should not be used by anyone with a weak heart or lungs or any impairment of the circulation whatsoever. Under direction it may be used from twelve to sixty counts at the rate of two counts to the second (the same rate as in walking 120 steps to the minute).

ADAMS' BICYCLE

Position: Lying on the back with the feet stretched up on the wall pointing toward the ceiling. Hands at the sides.

1. The arms are stretched along the floor to a position back of the head, the right leg is stretched up toward the ceiling and the left leg bent with the knee toward the chest.
2. The arms return to the sides, and the legs change their position, the left stretched up and the right knee to the chest. The feet slide up and down the wall.

This exercise was first brought to my attention by William Curtis Adams, Director of the Adams Place,

Pompton, New Jersey, where he has used it with good effect. The exercise differs from the ordinary bicycle just described in the addition of the arm movement which produces a widening and lifting of the chest, a very much-to-be-desired result. This effect on the size of the chest is increased in another way which makes another important difference. The fact that the legs do not have to be held in the upward position as in the regular Bicycle, because they merely slide up and down the wall, relaxes the muscles of the abdomen and the rectus therefore does not pull upon the chest. It is free to expand when the arms are raised, yet the thighs go down, rhythmically compressing the abdomen. Therefore we get in this exercise the abdominal massage at little expense of abdominal muscular contraction.

This exercise is useful for many persons for whom we would not care to prescribe Leg Raising or the ordinary Bicycle. It illustrates the fact, however, that exercises differ from each other in their effects and no one exercise is good for everything, and points the moral that they should be understood and used for the purpose for which they are designed if benefit is to be gained.

Use

The Adams Bicycle can be used very many more times and done much more rapidly than the ordinary Bicycle. Persons beginning their training may do it from twenty-four to sixty times at the rate of one hundred and twenty

to one hundred and fifty counts to the minute. Later it can be used from a hundred to three hundred times a day.

THE SCISSORS

Position: Lying on the right side, the right arm stretched under the head, the left arm bent so the finger-tips lightly touch the floor in front of the chest. Legs straight. The head rests comfortably on the arm. The whole posture is without the slightest tension. (The exercise is best done on the floor on which a blanket has been spread. The beginner may wish to place a small pillow under the hips.)

1. The left leg is swung forward and the right leg back. Both legs are kept perfectly straight, toes pointed.
2. The action is reversed, the legs changing places.

Action

This exercise consists in an action very much like straight-legged walking, similar to the opening and closing of the scissors. The movement is rapid, a hundred and twenty to a hundred and fifty counts to the minute. The greatest difficulties for the beginner are in keeping the balance on the side, in keeping the legs straight, the knees stiff and in swinging the under leg far enough. It is also hard to make the leg swing back as much as it swings forward. If the exercise is properly done the impetus of the legs will make the body slide along the floor in the direction of the feet and unless the right hand holds on to something

one will crawl by little jerks to the other end of the room. This is one of the signs that the exercise is done properly and the more marked the tendency to crawl, the more correct and vigorous is the action.

Another mistake that all beginners make is in holding the body too tense. It should not be tense at all. At first, of course, there is a tendency to roll forward on the face or back but this will be overcome as the legs get into their stride. They then act the way a gyroscope stabilizer acts on a ship and the action becomes perfectly steady. The fingertips may be placed on the floor in front of the body. At first they will be needed to keep the balance. Later, as skill develops, they may be raised entirely from the floor.

Results and Values

This exercise has very much the same effects as rapid walking or mild running. It employs many muscles of the body so vigorously that it stimulates the heart and lungs and calls upon the whole body for work. It is a physiological exercise and therefore should be used very little in the daily morning series. It can be used best at night before going to bed. It is an excellent sleep-producer. It is ideal for use in gymnasiums and sanitariums where body building can be made the whole business of the day.

The greatest value of this exercise lies in its building the trunk muscles into one solid elastic column. In running the effective action of the legs is only made possible

because they are firmly attached to a vigorous, solid trunk. The legs can't run by themselves. Running, with its rapid rhythmic change of strains, must have the trunk as a secure foundation. It must be all of one piece and strong. The Scissors exercise has the same action as running with the effect of gravity removed. The organs do not have to be held up from the lower part of the abdomen and all the muscular force can be devoted to the action.

The effect on the abdominal organs is different from any other exercise. They are held up in place and the muscles are moulded around them. Therefore the Scissors is of greatest effect in conditions where the abdominal organs have slumped,—gastroptosis, enteroptosis, protruding abdomens. This exercise, many women will be delighted to hear, is the best that has ever been devised for the reduction of fat on the hips. Fat is not only ironed away by the heavy massage through the weight of the body resting on the hips, but the heavy rhythmic action of the hip muscles themselves aids the reduction.

Combined with Knee Raising this exercise is an ideal method for getting fat off the stomach. If these two exercises are done enough a sylph-like figure can positively be guaranteed and it is strange that someone has not yet sold this secret by mail at $10 per secret.

Method of Use

The Scissors, it must be remembered, is a vigorous exercise. The average weak-waisted woman cannot do

it more than six times without straining the muscles of the side and panting for breath. She is not strong enough to do the exercise a sufficient number of times to do her much good. The only way to get the extraordinary benefits of this movement is to start in at six times on each side and increase the number one time daily until it can be done fifty, sixty or a hundred times on each side. When this point is reached the weak woman will be weak no longer.

This is one of the most valuable exercises that has ever been devised and no course of body training is complete without it.

DOUBLE SCISSORS

This exercise is developed from the Scissors and is even more vigorous and difficult. The position is the same, lying on the side, but the hands are clasped together over the head with the arms straight, making a straight line from the hands to the tips of the toes.

1. The legs kept straight are moved forward together about us far as one leg would be moved forward in the Scissors.
2. The legs, still kept together, swing back past the body axis to the position that one of the legs would reach in the single Scissors, but they are both there this time and the body makes a graceful bow from heels to finger-tips. As the movement continues there is a rhythmic swing of the whole body forward and backward with the

chest held high and the head resting easy between the arms.

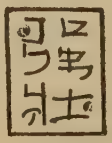
This exercise is only for the well trained body. Its peculiar values lie in the training of the whole body to become one elastic, resilient muscular unit. It has all the benefits of the single Scissors and more.

CONCLUSION AND SUMMARY

Our brief, simple Kick-Up exercise, the third in our series of seven, has been shown to be a member of a group of exercises of great importance. The four seconds' work will be expanded into thirty seconds or more by judicious selection from the horizontal abdominal exercise series.

The exercises described are but six of several score that have important values. These are among the best. There are others equally good or better but I do not feel justified in describing them for general use for they should be practised only under trained supervision.

The health physician who wishes to keep his patients well, the practitioner of the new specialty of health, will find great use for these while the seeker after good health in great abundance will make many happy discoveries of their effect upon his well-being and efficiency.



CHAPTER VIII

MASSAGING THE VITAL ORGANS

EXERCISE FOUR

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CHAPTER VIII

MASSAGING THE VITAL ORGANS

WHEN BUDDHA WAS A BOY

Forty centuries ago when Buddha was a boy and our own ancestors were naked savages, the mighty in wisdom and learning were gathered in the serene retreats of the Eastern world, north, south, east and west of the eternal peak of Mount Everest. The upward struggle of the whole human race, century by century, from its early series of birth epochs was carefully studied and recorded. It was handed down in symbol, tradition and mystery. It was precious. It was preserved from defilement from the touch of ordinary people. Wisdom was the priceless heritage and possession of the priest clan alone.

Of the thousands of mysteries of the East, many are grouped around the relation of the human body to the soul and its destiny. Religious thought and practice were

divided into three schools. The first turned towards the worship of the body. It exalted it as the throne of the spirit. It worshipped the marvels of its intricate actions and reactions. It ended often in defilement and defeat of the spirit, placing flesh above light and darkening the gleam. This tendency may be observed through each generation and in almost every religion down through the phallic worshippers of classic times to the sybaritic religious fads of today.

On the other extreme, the opposite school of thought recognized the body as a handicap to the spirit, a burden which weighed it down and shackled it to sin and error. This priesthood, by the practice of a thousand privations, kept the body strictly in its place and exalted the spirit. Through the long turning of the ages we find a hoard of saintly lamas, faquirs and flagellantes valiantly crippling their bodies to exalt their souls.

But truth finds its home at the golden mean. The school of religious thought which lies between the phallic worship on the one hand and human sacrifices on the other regards the body as the material home of the spirit. It is worthy of being kept clean, strong and wholesome. Its effect upon the spirit is regarded as the same as the effect that a well ordered, beautifully adorned home has upon its in-dwellers.

In ancient times, in that cradle of the human race and all of its mysteries, the great Asiatic East, there developed a series of physical exercises which were used in the course

of the training of the priest. The body was to be brought under control. It was to be made subject to the will. The breathing was disciplined and could be reduced to two or three deep breaths a minute. The heart beat was also subordinated to the will. The movements of the muscles of the internal organs, the whole alimentary canal, were subject to control. Much of the priestly effort was directed toward the discipline of the body, its perfection as an instrument, so that it might aid the release of the soul from its long series of incarnations and rebirths on this earth and wing it forward into Nirvana, the peaceful serenity of heaven.

Some of these physical exercises have from time to time come through the priesthood to the common people. They have been taught for a price. Some of those that are available are useless; others have turned utterly from their proper purpose, but there are a few which may be used with great benefit to mankind.

One of these is Churning, or Kundalani, which I have placed as the fourth of our seven exercises, the center and peak of the series. It is in all probability over four thousand years old. It was used long before the Pharaohs gathered their tribute from the Nile. It has many forms; the best for health development as I use them are given below.

The preceding exercises have been taken lying down. Churning is done sitting on the edge of the bed halfway up to the upright position.

KUNDALANI

Churning consists in making the middle portion of the body describe a circle. It is very difficult to do. It is comparatively easy to sit and make the head and shoulders describe a circle, but this is only a poor substitute with only a tenth of the effects of Churning. To anyone who has ever used a carpenter's brace and bit to bore a hole, the idea of the exercise is easy to understand. The middle of this tool which makes a horizontal circle round and round is like the middle of the body; its upper part, the brace, is like the head which stays in one place, and the lower part like the hips which have only the slightest movement.

The learning of this movement is the bridge over which the seeker for good health must pass. It will not come easy. It requires study and patience, but there is no effort that man can make in his own behalf that will bring greater rewards.

LEARNING THE MOVEMENT

Sit on a hard-bottomed chair, hands on the knees, facing a mirror. First you should learn the elements of the movement which correspond to the two diameters of the circle which it forms. The front and back diameter comes first. Make the middle of the body come forward. It is then in the most forward position you go through in making the circle. This will raise the head and straighten the

back. Next pull the middle of the body backward. It reaches the rearmost point on the finished circle of movement. The head will droop, but it should not move either forward or backward, right or left; its motion is only down and up. Drop a string with a little weight on it from the chandelier just over the top of the head and see if you can keep it strictly in line. Practise this until perfect.

The learning of a lateral side to side diameter is harder. Still facing the mirror, make the body curve to the right. If you wear a vest, the bottom button should move from four to six inches to the right but the top button must remain strictly in its place. Come back to the center again and make the lowest vest button travel to the left. If perchance you don't wear a vest, put on a belt with a buckle. Make it travel right and left while the head stays just where it should be, under the plumb line.

In this movement the hips will rock from side to side. When you go to the right the left hip will be raised. When you go to the left the other hip will be raised. During this time the shoulders remain facing the mirror and do not twist.

When the two diameters have been learned, start at the front with the belt buckle forward as far as possible, then go around the circle, the buckle traveling to the right. Continue until it is *back* in the hollow of the bent-in body as deep as possible. Again continue and make it go to the left as far as possible; go on then until you come forward and have completed one rotation.

This is Churning; one of the oldest exercise in the world and possibly the most valuable of them all.

When you have learned the movement you should try continually to make the circle as large as possible. You should try to make it as smooth as possible. Most people make circles at first that are full of bumps and more like irregular squares than anything else. This is due to a lack of muscular ability or actual physical defect. When Churning is learned to the right it should be learned to the left as well. If you have trouble learning Churning in the sitting position try learning the variations at the end of this chapter.

EFFECTS OF ORGANIC AUTO-MASSAGE

The greatest result of this exercise is the massage of the internal organs which it accomplishes to a greater degree than any other, even the Pumping and Trunk Exercises which have been prescribed. Massage is a measure which has been employed in the cure of disease for many thousands of years. It has been used in India, China, and Japan from the dawn of history.

Churning has valuable effects upon every part of the structure of the internal organs. It squeezes the blood from them and creates a suction which is supplied by new blood. This abolishes the mal-nutrition occasioned by sluggishness. It removes the cinders, ashes and waste of organic activity and brings in new, fresh, revivifying

supplies. An organ half sick from neglect takes courage and renews its life.

Massage not only hurries the blood current, but it also quickens the current of the lymph flowing through the minute channels between the clusters of cells which make up the structure. The fibrous framework of the organ is stretched and squeezed and stimulated.

THE EFFECT ON THE WORKING CELLS

The cells which really do the special work of the organ are the ones which profit most by massage. The liver, for instance, is composed of hexagonal cells, each enclosed in a fine membrane with a nucleus inside. These store up food which they take out of the blood. They neutralize poisons such as alcohol, tobacco and the indol from the intestine.

There are many important cells. Our health depends upon their activity. The ancients considered inactivity of the liver to be the cause of all mental and spiritual depression. The word "melancholia," which originally meant black bile, is now applied to depressive insanity. Modern physiology verifies the hunch of the ancients as to the influence of the liver for happiness and unhappiness. Happiness in turn helps the liver too, laughing makes the diaphragm pat the liver on the back. It shakes it up, makes us feel good and we want to laugh some more and behold! we have a better reason for laughter, for life is happier than ever before.

WHAT ONE SHAKE-UP DID

A professor of biology in one of the great universities specializes on the lowest forms of life, the amœba and its cousins, each composed of a single cell. He raised a family of these in his laboratory and isolated a pair of them in a little glass jar all by themselves. He treated them well, gave them air, food and light, and watched their destiny to see how fast they would multiply and replenish the earth, as it were. They did very well for a hundred and twenty generations or so, but then commenced to lose their pep. Marriages dropped off in the colony and I presume divorce was frequent. At any rate, the birth rate declined rapidly. The race was threatened with extinction.

It came to the time when the professor must go to the Woods Hole Biological Laboratory on the New England coast for his summer work. He packed up his feeble unicellular wards carefully and took them along. There was life in the old stock yet. Arriving at Woods Hole and unpacking, he set them on a shelf, as he thought, to die. The next day he visited them and with the aid of a microscope saw a tremendous activity in town. Things were speeding up as they look in a moving picture film when a street scene is shown at treble speed. Amœbæ were dashing hither and yon and generation followed generation with renewed activity.

Something had happened. After investigating all possible causes for this striking rejuvenation the professor

came to the conclusion that it must have been the shaking up that they had received on Long Island Sound and on the rattle-bang of the train ride. He tried the experiment again on other colonies, letting them stagnate quietly into old age and then shaking them up. The miracle was repeated. From this it became clear that it was the shaking that made the rejuvenation.

This is a universal truth. Stagnation is the preliminary to death. A shake-up is the renewal of life. The cells of the liver receive the same kind of stimulation from the Churning exercises that the amœbæ did in the baggage car. So if you wish your liver well and desire to keep it comfortably on the right side where it belongs, give it its daily massage (the same principle works on the office boy).

ANTI-CONSTIPATION

Other organs in the abdomen get the same stimulation, the kidneys, the suprarenal glands, the pancreas, with all of their functions essential to life and health. But most of all, the intestines need our help. They are aided by an active liver for a good flow of healthy bile stimulates them and prevents putrefaction, pain and trouble. A lazy large intestine causes constipation and according to many writers, constipation is the root of all evil. The accumulation of rotting, putrefying food waste in the large intestine is unquestionably a great menace to the health of civilized man. It is an even greater danger to woman because the physical inactivity of women makes

them subject to it. Nine out of ten sick headaches are caused by constipation, most "stomach upsets" are caused by constipation. The continual bathing of the whole body by the poisons of constipation which get through the blood and which the liver and kidneys try to carry away, is, in the opinion of modern physicians, the most frequent cause of high blood pressure, Bright's disease, degeneration of the heart, and death. While modern science has conquered smallpox and has brought diphtheria, typhus and malaria and yellow fever many stages toward the vanishing point, it has failed to stop the ravages of the diseases of the kidneys and blood vessels. The diseases that cripple and finally kill our valuable active business men in their fifties and sixties are heart disease, nephritis and arteritis.

Louis I. Dublin, the well-known statistician of health, told me that this group of circulatory diseases has finally reached the evil distinction of killing more men and women in the United States annually than do tuberculosis and cancer combined. While over-indulgence, alcohol and syphilis all have their part in this terrible record, the greatest cause of them all is intestinal stagnation,—plain constipation.

It is fair to state that the daily practice of this one exercise alone would save almost innumerable lives while the practice of a good all-round health and exercise program would unquestionably add years of useful activity to countless executives, lawyers, business men and valuable

citizens of all kinds. No one medicine or exercise is a cure-all, but Churning comes more nearly to playing the role than does any other medicine or exercise I know of that can be done within the four walls of a room.

WHEN TO CHURN

Churning should form a part of every period of morning exercise. It should be done twenty times right and twenty times left, changing at each ten. Do it slowly and with care to make each circle as large and as vigorous as possible. The religious devotee of India is likely to use Churning for one-half to three-quarters of an hour at a time. Needless to say, Churning with its extraordinary mechanical effects upon the abdominal organs must not be undertaken when there are serious abdominal inflammations which may be active or stimulated into activity.

Nevertheless, it is being employed in practice and hospital for the relief of old inflammations of the large intestine, in cases of colitis, adhesions and chronic invalidism. This is a matter, of course, which should be undertaken only upon the advice of a skilled physician who is well informed on exercise and points again to the great desirability of the annual health examination.

VARIATIONS

The original position for Kundalani was sitting cross-legged with the heel of each foot tucked well under the opposite hip, with the hands placed on the knees. For

ordinary purposes this position has no advantage whatsoever over the sitting position on the edge of the bed.

The most valuable variation and the one I use most frequently is a series of three exercises, the last of which corresponds to Churning. The first two are like the preliminary practice in learning the exercise in the sitting position. These are called the Pussycat, the Dog Wag, and the Camel.

The Pussycat

Position: On the hands and knees with the arms and thighs straight up and down.

1. The back is arched as high as possible, just like an angry pussycat. I find that people can do this exercise more readily when they think of the pussycat than they can from any other description.
2. Bend the back down as far as possible, making it hollow just as if it were heavily loaded.

Thus the trunk is bent down and up, corresponding to the first preliminary exercises, the front and back diameters practised for Churning. The same inward contraction of the abdomen occurs when the back is arched.

The Dog Wag

Position: On the hands and knees.

1. Just the way a dog wags his tail, twist the hips to the right without moving the head and shoulders. All the bending is done at the waist line.
2. Twist the hips to the left.

This exercise corresponds to the practice of the second exercise used in learning the Churning. These two exercises are also to be done in learning the third exercise, the Camel. If you have had any difficulty in learning Churning, you can learn the Camel on the hands and knees and then when you do it sitting down, you are doing Churning.

The Camel

This exercise consists in putting together the Dog Wag and the Pussycat. They make the larger animal, the Camel. I have called this the Camel because I once rode on one of these animals and the motion, a combination of pitching and tossing, seemed to be precisely the same. I do not know whether this exercise has ever been used before, but I believe it will have a great usefulness in the future.

Position: On the hands and knees.

1. Raise the back as in the Pussycat.
2. Keep up like the Pussycat but shift the hips to the right as in the Dog Wag.
3. Keep the hips over to the right but let the back bend as in the second motion of the Pussycat.
4. Keep the back bent and wag the hips toward the left.
5. Keep hips wagged to left and raise the back hard. Continue.

The trunk in this exercise will make a circle very much the same as in Churning. The Camel has two great advantages over Churning. In the first place the move-

ment is more free. The muscles of the trunk are employed more vigorously and the bones of the spine get more training and flexibility. But the greatest advantage lies in the fact that the trunk is horizontal instead of being set upright. You will recall that we saw that the great advantage of taking abdominal exercises lying down in preference to taking them standing up was due to the fact that gravity did not need to be overcome. The muscles were not required to lift up the abdominal organs before they could exercise in their proper places. This was applied to the Camel. The position on all fours is the old biological position. In the dawn of the race the organs were all hung from the backbone. When we get back on all fours we place them in their most comfortable and favorable position for action.

Churning then, in this position, gives them a massage in the most effective form. This has many advantages, most of which are too technically medical for a brief, general book.

THE KINKING COLON

The large intestine, called the colon, is a tube through which the food waste should pass without hindrance. The colon has three flexures, or places at which it bends at right angles. One of these is under the liver up in the right side, the second under the heart, up in the left side, and the third down in the left-hand corner. You know what would happen if you took a rubber tube and bent it at an

angle. Try it and see. You will stop the flow of any fluid through it. If the colon gets tightly bent at these points or any other point the food mass cannot get through. Stagnation, constipation and putrefaction take place. This does not ordinarily occur in a healthy man or woman but if you let the transverse colon which goes from the right to the left side of the abdomen, connecting the ascending to the descending colon, droop down and form a V instead of a straight line, you have made two kinks far worse and added another at the angle of the V.

This is precisely what occurs when men, women and children let their abdominal walls get weak and bulge. The transverse colon falls down and makes a V. The food waste mass has a treble obstacle to overcome. This is bad enough but if we add the usual accompaniment of a sedentary life, and overeating, we accentuate all the abnormal conditions.

All of the other exercises which strengthen the abdominal wall and lift up the transverse colon will help to relieve this condition. The Camel, however, serves an additional advantage. This V of the transverse colon falls forward as if it were on two hinges, the right and left side kinks at the head of the ascending and descending colons. Falling forward in this way, it opens these kinks. Churning in this attitude can then massage the colon and stimulate activity unimpeded. The results in some cases are astonishingly prompt and efficient.

Of course, not all cases of constipation are due to this

kinking of the colon. There are at least twelve causes of constipation, many of which occur together in any one case, and where these kinks form a decided factor in the case the best results may be expected.

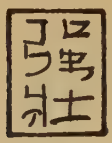
The record cure in my files is that of a woman of thirty-eight years of age who had had constipation for nineteen years and had to take medicine daily and enemas twice a week. She took this Churning exercise with two others in the series under careful direction and was (apparently) cured in two weeks' time! She has had no return of her trouble up to the present time, two and a half years later. She says, "Churning is cheaper than cascara and more certain."

Every case of constipation, however, will certainly not be cured in the same way, and those who have this trouble (which is, of course, almost everyone) should get a careful annual physical examination by their own health physician.

CONCLUSION AND SUMMARY

Churning is an exercise that should be taught to every civilized man, woman and child, for it is the simplest, most economical and effective method of keeping the abdominal organs stimulated and in tone. The seeker after good health in great abundance may well adopt it for his own special enthusiasm. He should do from twenty-four to forty-eight turns a day, dividing them equally between the sun-wise turn and the reverse. The only danger lies in the fact that he may be tempted to do this

exercise alone, omitting all others. While it is perhaps the best exercise in the sense that it serves more diverse and valuable purposes than any other, it is by no means a cure-all and should not displace other valuable movements of the series.



CHAPTER IX

CORSETS INSIDE AND OUT

EXERCISE FIVE

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CHAPTER IX

CORSETS INSIDE AND OUT

"God hath made man upright but they have sought out many inventions."—*The Preacher.*

ACCORDING TO BIOLOGISTS

According to the biologists, it took about five hundred thousand years to make man upright. The clay into which the spirit of life had been breathed by the Great Spirit became moulded by the shaping of countless centuries into a being ready to rise to the stature of a man. The change came gradually. In the greatest battle for the possession of the Unfailing Spring of the Valley of Abundance, the giant grandfather of Ab led his band to victory, brandishing a terrific club which he had torn from a giant red pine. His right foreleg had become an arm and his forepaw a hand. He beat his breast with his clenched left fist like a resounding bass drum that accompanied the howling war cries of his victorious clan.

With the first use of a weapon he rose on his haunches and stood in a squatting upright position. He made use of his hands to make him a man. He taught Ab's father a few of the tricks he had learned and the grandsons did credit to the tribe. They grew up an unconquerable, two-fisted family that learned to use their hands in many new ways. Their hardy progeny chipped out flints and made knives. With these they slew and skinned animals and made themselves clothes and, when others died of cold, they went through hard winters in splendid condition. They became artists as well as fighters. They learned the trick of keeping flocks, of raising seed-bearing grass. They developed agriculture. They began to live in groups, they made villages, they cherished tradition, order dawned and became the first law of a heaven-destined civilization.

God had made man upright.

To become upright was a long, long task. To keep upright is difficult. The attraction of gravity is continually pulling man down again to the place whence he came. It took countless ages of evolution to make him stand up. It takes only one life-time; in fact, it takes only one day of activity, to lay him horizontal again at night. He rises on the morrow refreshed but he goes through the day matching his strength against the tenacious clinging fingers of gravity which, should he weaken, make his head droop, pull his shoulders down, flatten his chest and loosen his abdomen. Mother Earth is constantly calling,—calling him home.

PTOSIS

It is a difficult thing to stay straight. It requires balance. It requires muscle. The head must be poised on the shoulders, the chest held up, the back kept straight and unbowed. Otherwise a slow sagging down results.

This sagging down is called *ptosis*. Whenever we see it it is a sign that the vitality of the man has given way in part or in whole to the effect of gravity. His strength has been over-matched.

SKELETAL PTOSIS

Gravity pulls on every part of the body. It affects the skeleton. A man may be six feet tall when he is full of vitality and "every inch a man," but when he becomes tired, discouraged or weak he loses from three to four inches in height! This is due to the increase of the curves of the backbone, the drooping of the head, the slumping of the pelvis. This is called *skeletal ptosis*. It is caused by the relaxation of the muscles which hold us up straight.

If God had made man upright in one quick job instead of by a long process of gradual improvement of lower forms, he probably would have put a backbone in front as well as in the back. From an architectural standpoint it is just as absurd to have the supporting framework at the rear of the body as it would be to have it at the rear of a building and our skyscrapers like a comb stood up on one end. What happens to the body is just what would

happen if the teeth of the comb got tired. They droop. This is skeletal ptosis. In default of the backbone in front to keep the body propped up whalebone was used, and behold! corsets were invented.

VISCERAL PTOSIS

Gravity affects the internal organs. It can do this only when the abdominal muscles give way and let the lower abdominal wall bulge out. Then the intestines slump downward, the liver and the stomach follow, the chest flattens and lets the heart go down also. A bulging abdomen is a sign of weakness at every age. In the baby suffering from malnutrition or rickets, the little panting chest sits insignificantly on top of a big, round, soft abdomen. If the baby lives the results of this show in later life when the lower ribs bulge and the upper chest shows depression. The bones tell the history of early illness. In later life we find many a prosperous looking vest covers a weak, bulging abdomen with all of the organs accustomed to their depressed condition and doing the best they can against the handicap of indolence. A strong abdominal wall prevents this. Artistic ideals of manly vigor from the time of the Greeks have been expressed in statuary of men with strong, slim waists. Not only has there been the noted strength of the muscular column of the rectus abdominis at the front, but it has been flanked on either side by plates of muscular armor. Art has instinctively interpreted the basis of masculine

vitality, a strong abdominal wall, as an element in masculine beauty. True art is always biologically correct.

A strong abdominal wall is a pledge of length of days. Its vital support will give every body process a great advantage. Disease will shun its possessor. Every chance for happiness will be doubled.

A weak abdominal wall, on the contrary, is like a tombstone of lost hopes and lost vitality. It is the sign of feebleness, a pledge of pain, trouble and early departure. (See chapter on weight and overweight.)

BLOOD PTOSIS

When the war broke out I was sent to one of the great training camps as an observer and I found the best point of vantage from which to make observations to be the rear rank of a regular company as an ordinary buck private. On Saturday afternoon we stood "inspection" and the inspection, particularly the standing part of it, was no joke. We stood at attention for from thirty to forty-five minutes. This was the last bit of labor to be done in a long, laborious week. The men were tired out. Every few minutes or so there would be a thud, the clatter of a rifle as it crashed to the ground and a candidate for a commission would be stretched on the ground in a dead faint. In a few moments another, and perhaps another would fall. But it was the tallest men who fell the fastest.

They fainted, because they got an attack of BloodPtosis.

The machinery which keeps the blood up in the head got tired and gave way and the heart could not pump enough blood to the brain to keep it awake. This was because the walls of the abdominal blood vessels weakened and bulged and allowed the blood to collect in a great stagnant pool. This is all very well when we sleep at night but it will never permit a man to keep his brain going in an upright position. This blood ptosis is illustrated by an experiment conducted several years ago on rabbits.

"AS WEAK AS A RABBIT"

Rabbit No. 1 was hung up by his ears with his tail end down. He died after three-quarters of an hour,—from blood ptosis.

Rabbit No. 2 was hung up by his hind legs with his head down. An absurd position for a rabbit, yet he was fairly comfortable after twenty-four hours.

Rabbit No. 3 was hung up by the ears, but a band (like a corset) was placed around the lower abdomen. Instead of dying in three-quarters of an hour, like Rabbit No. 1, he lived so long that he might have died of starvation.

Rabbit No. 1 died of blood ptosis. The machinery which keeps the blood up in the head in rabbits in the upright position is so weak that it will not work more than three-quarters of an hour.

Some men are as weak as this, and some women are weaker. We all know the woman who says, "My dear, I simply can't do a thing in the morning until I get my

corsets on. If I make an effort and try to get about, I just simply literally faint." She has an abdominal wall and a sympathetic system blood control just about on a par with the rabbit. She has blood ptosis.

Blood ptosis is an every-day occurrence. Some men and women are half-fainting most of the time. They drag themselves around and complain of lack of pep. This is because they have not vitality enough to keep the blood from collecting in the abdomen and the abdominal wall fails to come to the assistance of a weakened circulation. They have no more strength than a rabbit. Such people need a thorough investigation of their bodies and minds to find out what influences are undermining their strength. It may be a sluggish intestine, a focal infection in the tonsil, at the root of a tooth, too much food, a weakened kidney, too little sleep, no exercise or general dissipation. Whatever it is, the health doctor should discover it and set him on the right track.

TESTING BLOOD PTOSIS

Blood Ptosis is revealed by taking the blood pressure lying down and comparing it with the blood pressure standing up. If the blood pressure falls on rising it shows that the circulation is weak. If, on the contrary, it rises it shows that the machine for keeping the blood well distributed to the upper part of the body is in good working order and the man has physiological power enough to be upright. The heart rate is also taken into consideration,

for when the circulation succumbs in part to gravity and fails to send the blood up to the heart in sufficient quantities, the heart beats more rapidly than it does when one is lying down. In fact, one may get a fair idea of the efficiency of his circulation control by comparing the heart rate lying down with the heart rate standing up. It should not increase more than ten beats to the minute. Persons in poor condition will show a difference of thirty, forty or fifty beats to the minute increase on standing.

Blood ptosis tests should of course be made by the physician as a part of his regular medical examination.

THE TICKLE TOE

In an old stable near Madison Avenue in New York City, Dr. Walter B. Peet was training a group of candidates for the Columbia University crew. The previous year Columbia had gloriously won a great race from her college rivals. But this year most of the older heroes had been graduated and preparations were made to get out a large number of new candidates.

Dr. Peet looked over the raw recruits and delivered himself somewhat as follows:

"Young men, you have a good deal to learn. You've got to understand that you don't row entirely with the arms; they are the least important for they are only connecting rods. You row with your legs, you row with your backs, but most of all you row with your guts! Now, stand up there in a line and do this exercise a hun-

dred times and every time you report for training start right in and roll up your hundred."

We lined up and learned the exercise, which I later called the "Tickle Toe." It did its bit in making a strong crew, and one of the squad at least has never forgotten the exercise. He has given it directly and indirectly to several hundred thousand persons, young and old, and now he is giving it to you.

HOW TO DO THE TICKLE TOE

Stand up straight, with the feet spread wide apart. You have had all the coddling you are going to get today. Now you are rearing up on your hind legs and facing the world.

Position: Stretch the arms out to the sides.

Lift the air with the flat hands just like the wings of an aeroplane. This lifts the head, expands the chest, raises the ribs, straightens the back and is a fine exercise in itself.

1. Twist the trunk, swinging the right arm back and the left arm forward, turning the body at the same time so that if you had a wand across the shoulders from fingertip to fingertip it would be kept perfectly straight. Swing as far as you can.

2. Swing forward and all the way around to the left in a similar fashion, not forgetting to turn the shoulders with the arms, making the whole twist at the waist. Now the left arm is back.

3. Swoop that left hand way down and around until it touches the right big toe, bending the knee so that it touches the chest. The other arm goes back up into the air.

Hold this position momentarily, then repeat the same exercise. The left hand which is down by the floor swings up and back where it came from and you aeroplane back to the right, facing the right and making the twist at the waist as before. The right hand is now back and of course that is the hand which next swoops down to touch the opposite toe.

This is an easy exercise to learn and a simple one to do. Its rhythm is "swing, swing, touch," "swing, swing, touch," corresponding to the two aeroplane swoops and the Tickle Toe position itself.

SELF-MADE CORSETS

Aeroplaning, that is, twisting the body with the arms sailing about in circles, is a splendid exercise for the trunk muscles which form the sides of the abdominal wall. The front of the abdominal wall is formed by the rectus abdominis, the back by the backbone and two heavy columns of muscle, the *quadratus lumborum*. But running from the ribs above the quadratus in back, around to the front and down to the pubic bone is a triple set of muscles. The fibres of the innermost run transversely and it is called the *transversalis*. The fibres of the second run obliquely upward and it is called the *internal oblique*. The fibres of the outermost run downward and forward in

the direction of the fingers when the hands are placed on the hips, and is called the *external oblique*.

The fibres of these muscles interlock with the muscles of the chest. These muscles are the great conservers of vitality. They are the best kind of corsets, for they have been provided by dear old Mother Nature. They are three-ply, reinforced in front and self-adjusted. They never wear out and require only a little attention. You need never buy a new pair as long as you live, but you must take care of the ones you have for they bag and bulge when you become weak, tired or old. If you can keep well and fit and not work too hard, these are all the corsets that anyone needs.

While this is true, it is just upon this point that rests the great divergence of opinion with reference to corsets. Some enthusiastic hygienists preach that corsets are never necessary. On the other hand, some would have us believe that corsets are essential to everyone. Both extremists are half right, each, therefore, doubly dangerous.

Corsets remind me of the definition given by the small Sunday School scholar to the question "What is a lie?" He replied, "A lie is an abomination unto the Lord and—and," he paused a moment, "but an ever-present help in time of trouble."

CORSETS ARE SPLINTS

Corsets are a very necessary help when there is weakness but they are essentially a splint. A broken leg is weak and

requires splints. When it becomes strong, splints should be thrown away. Weakness and weariness are so common and so justified by the urgencies and strains of our "upright" life that an abdominal support to correct the drooping of the viscera and blood ptosis is almost a common necessity. They certainly release a good deal of energy for other uses. Corsets economize vitality, but do much to impair it when used as a substitute for health.

Just as splints worn on a broken leg for a long time cause it to atrophy, so corsets worn for a long time cause the abdominal wall to weaken and atrophy (unless exercise is taken to strengthen it). They occupy somewhat the same place in human economy as laxatives. In case of need they are necessary, but we as a civilized race lazily permit the need, court the necessity and become intestinal invalids.

To wear corsets to economize vitality without cultivating vitality is like living on an unearned income,—comfortable but devitalizing.

THE VALUES OF BIOLOGICAL CORSETS

The difference between a woman with a strong set of muscles running up and down and around the abdomen and a woman who is weak, droopy and bulgy, is greater than the difference between a woman who is merely not sick and a chronic invalid. Expressed in terms of money, it is greater than the difference between a multi-millionaire and the average man.

The woman with strong-toned abdominal muscles has every chance of a good digestion, freedom from constipation, every assurance against diabetes, a positive protection against obesity. The all-important functions of the generative organs, so often fraught with danger, pain and disability, have every favorable circumstance. The heart and lungs are supported, the circulation is strengthened, the emotional system is buoyed up, and life is stronger and brighter as well as longer and more full of happiness. Strong abdominal muscles are biological riches. They are obtainable by every woman who has the intelligence and will take the time and trouble to find out the exercises which produce the desired results and proceed to use them as consistently as she takes her meals.

The best way to provide these biological corsets is to grow them in the children as they develop. Strange to say, the children who are in the best circumstances often get the poorest chances. The little ones who are left to themselves to run about the streets and climb fire-escapes either hustle or die. Only the strong ones live. The carefully protected child is preserved from all rough contacts, prevented from using her muscles except under the most careful supervision, and she becomes pot-bellied and hollow-chested. The weak ones are kept alive, the intestinal tract gets stagnant, the tongue is coated, there are continual crops of adenoids and "tonsils," and the more she is coddled the weaker she gets. Simple outdoor games with a governess and even athletics are not sufficient.

She needs special trunk-making exercises which go right to the spot, prescribed by a physician who knows muscles and maidens as well as medicine.

The need of formal corrective exercise is just as general as the upright posture, and every child, boy or girl, in school or out, needs to strengthen the abdominal wall.

Perhaps we can remember when we were children, we were deterred from "making faces" of the most atrocious and startling character by the warning, "If you don't look out, your face will stick that way when you grow up." There was some truth in this, as we are inclined to believe when we note some of the faces about us. It was undoubtedly true in regard to abdominal walls, for we can read in the structure of the chest, spine, abdomen, shoulders, and in every baggy line of the half-made, half-crippled adult the history of coddled or neglected years.

The parents who are wise will have corsets fitted into their boys and girls as early and as expertly as they may, and will then see that they are kept in good repair.

CORSETS ANTEDATE THE PYRAMIDS

Hygienic muscle corsets were first worn by the first vertebrates, artificial corsets before Tut-ankh-amen. They were certainly found in Rome at the time when the luxurious, lazy patrician women bandaged the lower abdomen. In Germany in the Middle Ages we hear of abdominal supports. They were introduced into France, and at the time of Catherine de Médicis, no court lady

was permitted to have a waist of more than thirteen inches. Tight lacing continued among the aristocracy, whose women did not have to support themselves by muscular labor, with varying degrees of severity.

Tight lacing made the figure over-feminine, accentuating the hips and bust as efforts to gild fine gold. It also had a motive similar to the Chinese binding of the foot,—to demonstrate that the possessor of the thin waist was useless for anything but ornament and far above the common need of labor.

The change in fashion from the narrow waist is ascribed to Sarah Bernhardt who appeared as a boy in *L'Aiglon*. It is certain that the straight front corset appeared shortly after that time in 1900. The narrow waist persisted, however, until 1905, when it gradually gave way to the normal feminine figure with a Venus de Milo waist. From 1920 to 1923 it went still further until there was no waist at all and the desirable figure was the appearance of an immature girl of sixteen, theoretically cylindrical without a suggestion of roundness in contour. This boyish figure is a struggle to appear young and unspoiled. It is perhaps the least harmful of any of the corset fashions since the time of Cleopatra.

VALUES OF ARTIFICIAL CORSETS

A corset is useful when it aids failing nature. It is good in proportion to its imitation of the structure and mechanics of the body.

When there is a great increase in abdominal contents from tumor, cyst or child bearing, a support must be worn until the condition is changed by operation or childbirth. When the sacro-iliac joint at the lower back is loosened, a belt may be worn until exercise corrects the trouble. When the abdominal wall is weak and bulging there is a ptosis of the organs, and a proper belt should be worn. Exercises should also be taken, otherwise the belt confirms the weakness.

A band around the lower abdomen below the crest of the hips will support tired muscles at the end of the day. It can be recommended for everyone, for it can do no harm. A band four inches or so wide is the minimum of the modern corsets which are no more than a sacro-iliac belt or hip girdle. It is also the fundamental base upon which all good corsets should be built. It gives support to the abdominal "front basement" and its pressure on the lower back is also a support to the sacro-iliac joints.

As we go above the level of the hips we get into danger increasingly as we reach the waistline and go above it.

BAD FEATURES OF CORSETS

Support from below is most innocent and beneficial. If, however, the corset maker gets this uplift from its anchorage in the small of the back above the sacrum he does harm, for the load of the abdomen tends to increase the curve of the small of the back and weaken it. This is shown in many women of middle age with a deep, stylish,

hollow back (style 1905), hips back, pelvis tilted downward and an abdomen that has no support except the artificial one which in this posture is quite necessary. A bad physical complex which has damaged many women, ruined their tempers and made them unhappy, crippled wives and mothers.

The lumbar curve should never be increased by a corset. The ideal back is almost straight at this point and the ideal corset should be almost straight to help the back, not to break it.

Increased abdominal pressure may result from too great constriction of the abdomen in an endeavor to reduce its apparent size. A little confinement below makes a support for the organs, increases the blood pressure when it tends to fail, relieving blood ptosis and aiding nature generally.

Increased abdominal pressure impedes circulation and digestion, and if it crowds the organs upward it interferes with respiration and heart action. This formerly occurred in the tight lacing at the waist line. It is found now in the straight, barrel-shaped corset when it is used to "reduce." The "pleasing plumps" and "stylish stouts" have profited by the expansion of the new corset at the waist line, but tight lacing is still prevalent. It is not a substitute for youth and vitality. It cannot oxidize carbohydrates and prevent the deposit of fat.

Any corset that goes above the waist is likely to restrict the lifting of the ribs in breathing. This is not so bad as

back distortion or downward pressure but it is a continual handicap by decreasing breathing. This decreases the body ability to use its food and tends to increase the deposit of fat,—and the "self-reducing" corset of this type thereby actually increases weight!

Garters are usually attached to the corset. If they pull from the hip girdle, all is well: if from the back, increasing the curve, it is not so well. It is worst of all when the garters are hung from the shoulders as they were in some "hygienic" waists of older times. This garter pull helps gravity drag down shoulders and chests and adds one more burden to life. Even round garters are far better.

THE EVIL OF THE BRASSIERE

The incorporation of the brassiere with the corset is a great mistake if the garter pull is borne by the shoulders. If it is transmitted to the spine by a bias device, it helps to make an attractive and efficient body support. Everything that has been said against corsets can be said against the brassiere. The chief sin of the present generation is binding down the chest to give the undeveloped boyish figure. Tight lacing has been transferred to the region of the heart and lungs. It restricts breathing, impedes circulation and finally gives the boyish flapper a sort of woe-begone, weakly defiant expression of body that eventually creeps into her face as well. Fortunately, styles change.

WOMAN'S RIGHT TO BEAUTY

Corsets used for the purpose of beauty have their values. Women are always justified in assuming Nature's biological virtues if they have them not.

"Little dabs of powder, little spots of paint,
Make the pretty ladies look like what they ain't,"

and the corset helps.

The best way, however, to exhibit biological attractiveness is actually to possess it. Put the rouge in the cheek itself, the sparkle within the eye instead of on the eyelashes, and make the form of the body tell the fine truth of attractive good health. I know of many cases of women who have ceased being ugly and become beautiful by adopting Nature's stock of beautifiers under intelligent medical prescription. On the contrary, a good many have been half-ruined by exercise charlatans and fat reductionists, but many more are gradually deteriorating by neglect, hard living, hard work, or laziness.

Corsets have been getting less objectionable and more useful as the decades and centuries fly past. Today the balance in favor of their use is greater than ever before. This is true largely because corsets have never been more intelligently made than at present. This is the result of a greater knowledge on the part of the general public as to what is good for them and what is bad for them, and a greater wisdom in applying the discoveries of the physician to the affairs of everyday life and commerce. They are

less generally needed than a decade or two past because of the introduction of physical training into the lives of the children at school,—one of the greatest benefits man has devised for himself in the last century.

Let every woman and every man, for that matter, build a self-made corset, assured that this brand will fit the best, last the longest and add most to beauty and health. But in this world of effort and labor and long days of playing the part of upright men and women in a straining turmoil of hectic civilization, a little reinforcement and defense against the tireless clutching fingers of gravity is not only permissible but desirable, if wisely used.

CORSET BUILDERS

The most universally used trunk exercise is ordinary trunk bending. It has the advantage of simplicity and vigor; it not only strengthens the abdominal wall, but it gives an excellent auto-massage as well. In its simplest form I call it the N-E-W-S because it bobs the head to the four points of the compass and it gives news to the internal organs that something is going on.

N-E-W-S

Position: Standing, trunk erect, feet widely spread apart, hands on hips.

1. Bend forward and down as far as possible.
2. Bend backward as far as possible.
3. Bend to the right.
4. Bend to the left.

Repeat 4 to 12 times.

This exercise is done with an enthusiastic swinging motion, one position swinging directly into the next without stopping. The new convert to exercise will find difficulty in bending back as far as he should. A good rule is to bend back until you can see the opposite wall, at least where it meets the ceiling if not half-way down the wall to some picture which can be taken as a landmark.

There are as many ways of doing trunk bending as there are teachers of physical training. This method gives as much benefit with as few disadvantages as any. It is important to draw the abdomen in when the trunk bends forward for the muscles will stretch when the trunk goes backward and we desire to have shortening as well as strengthening of the abdominal muscles.

KNEE RAISING

Position: Standing, trunk erect, feet together, with elbows bent, placing the hands so that they are in front waist high.

1. Raise the right knee until it hits the hand.
2. Down.
3. Raise the left knee until it hits the hand.
4. Position.

Repeat 8 to 16 times.

The movement should be 120 counts to the minute. This exercise is designed not only to strengthen the abdominal wall but also to massage the abdomen. Its

effect can be increased as in the horizontal exercise of a similar nature by placing the fist in the groin so that when the knee is raised it will push it into the abdomen just where the massage is needed most. This exercise is like the Appendix-Sigmoid Special.

The knee raising exercise is described above only in its elementary form. It should be made more difficult by raising the hands to the height of the breast and then using them as a target for the knees. When one becomes really lithe and strong the knee can be made to hit the shoulder. This cannot, of course, be done if there is any bulging encumbrance at the waist line, which faithful trial and work at this exercise will serve to reduce.

Caution: This exercise loses its value almost entirely if the hand is brought to the knee instead of the knee being brought up to the hand. If you are fat or lazy be on your guard against this.

KICKING

Fighting in olden times was done with everything a man had. He used not only two fists and any convenient club, but his head and feet as well. Kicking gives exercise to all of the muscles of the body from the toes to the head and it is one of the best exercises for the abdominal muscles that we can use.

Stretch the right hand forward at the height of the shoulder and as quickly as you can kick the hand with the right foot and then with the left. At the same time be

sure not to lower the hand to the foot but honestly bring the foot right up to the hand. Be sure also to keep the head and chest up as well and do not double up like a jack-knife. Repeat this double exercise eight times, pausing for two deep double breaths in between, and you have a good dose of abdominal work.

THE CROSS KICK

This is harder and will take some training.

Stretch the arms straight out *sideways* at the height of the shoulders. Then, without letting them drop, kick the *left* hand with the *right* foot. Return the foot to place and then kick the right hand with the left foot. This gives the whole body a vigorous twist and it also trains the body to be able to stand tremendous twists and hard strains. It will put whipcord into the flanks quicker than almost any other exercise I know.

THE DOUBLE WHIRL

This is a trunk bending and twisting exercise encouraged by the arms which do a pinwheel whirl which requires considerable training.

Position: Separate the feet, bend the right knee and place the left hand on the right toe with the right arm straight up and back. This is very much like the Tickle Toe position.

1. Raise the left hand, stretching out to the right as far as possible, circle it up in the air, reaching

high. Continue the circle over to the left, reaching out as far as you can to the left and bring the hand down past the left foot and knee and continue it up behind as far as it will go. During the time the left hand is doing this great big circle the right arm is following it around and when the left hand goes up and back the right hand naturally comes down and touches the left toe, and the position is just the same as it was on the other side.

2. Now it is the turn of the right hand to make the great circle far out, far up, and way over to the left and down past the right knee and up behind, while the left hand follows it and finds its place by the right toe.

This movement gives exercise to the whole trunk, sides, back and front and is one of the best that we have. It should be done from eight to twelve times for morning exercise and twice that number at other times, depending upon the other exercises in the series.

CONCLUSION AND SUMMARY

This chapter has been devoted to the strengthening of the abdominal wall and the moulding of a man into an upright being with a trunk as strong and straight as that of a Norway pine. A man or a woman so girded about with strength has developed a priceless quality and one which will do much to insure a long life filled with health, happiness and efficiency in great abundance.

CHAPTER X

PEP STEPS

EXERCISE SIX

TRAINING FOR A LIFE

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CHAPTER X

IN TRAINING FOR LIFE

PEP STEPS

THE ATHLETES

See the athletes lined up at the start waiting for the crack of the pistol,—splendid specimens of the human race, crouched behind the line with backs arched and legs bent like magnificent steel springs, ready to leap out into space and dash down the long stretch with every fibre bursting with intense, powerful action in a splendid rush of commanding, overwhelming force.

Man at his best! The product of all that science can add to the endowment of nature. The athlete has been trained. The wisdom of years of experience of the high-priced college coaches has been brought to bear to bring these young men to perfect condition. They are trained to run a race, to win a prize, to bring honor to the college, to demonstrate the superiority of their Alma Mater and to magnify her glory.

So it has been from the beginning, wherever there have been young men, and so it will be until the end, lest the world decay and die. This is nature's old-fashioned way of making men, of testing them, of insuring the perpetuation of the fitness she approves.

THE RACE OF LIFE

But where is the training for the race of life? Where are men brought into condition to run the full length of the course, to overcome its hazards and to win the prize of success? Where is the training that will fit a man powerfully to stride through the years, avoiding the obstacles of failure, the disasters of disease to win through to a serene old age?

In the schools there is physical training.[1] The colleges are following suit, but the men and women in business or profession and the worker who has never been to college must take their own chances. There is no compulsory training. He is in charge of himself. He can train himself into good condition,—he can let himself deteriorate just as wisdom or stupidity dictates. Perhaps it is just as well that this is the case because nature, ever mindful of the progress of the race, will permit the ignorant and careless to perish while those who are wise will live and transmit their wisdom to a race of increasing brilliance.

Races on the cinder track and in the industrial world are

[1] Since 1916 twenty-eight states have followed the example of New York State and have made physical training compulsory in the public schools.

won not so much by strength of leg as they are by strength of the muscles of the heart and of the other parts of the circulation. Races of life are made not only successful but long and happy by the strength and soundness of the heart and circulation. We have seen that the cardio-vascular diseases are rapidly becoming the leading causes of death.

The old warning of the Bible, "Keep thy heart with all diligence for out of it are the issues of life" has a very forceful application to present-day affairs. The training of the heart for the race of life is one of the wisest expenditures of time and effort that can be made.

THE VICTIM OF PNEUMONIA

A few days ago I was called to the bedside of one of the eminent young lawyers of the East. He had an attack of pneumonia. Everything that could be done for him had apparently been done. Physicians and nurses were in constant attendance, and oxygen was being administered continually. I examined the patient, verified the diagnosis and proceeded to listen to his heart. It was beating with great rapidity with shallow, hurried throbs, trying its best to push the blood through the engorged lungs. This was to be expected. I carefully measured its size above and across and turned away with a bitter sensation of defeat, for I knew that that heart could not last out the day. It was too small, too weak,—it had never been trained. There was nothing that could be done. It was

too late. If he had trained his heart with but a thousandth of the attention he had used in training his brain, not for the running of a hundred-yard dash but for the running of the race of life, with the long strain of pneumonia as a hazard, he would have won through, whereas at the end of a few hours—he died.

THE MAN WHO WON HIS BATTLE

Not so, however, the architect whose beautiful structures are springing up in New York's most fashionable streets. He was also brought down with pneumonia in the same week and his age tallied to a year with that of the lawyer on a nearby street. But there was a great difference in the two men. I knew the architect's heart for I had worked with it. He had been sent to me by an alert leader in medicine six months previously with the request, "Put him in condition. He needs it." I had found him flabby inside and out, slightly rheumatic, his liver with a grouch, and his heart a disgrace to a human being. He caught the training idea, however, and pursued his course steadily and with success. His flesh hardened, his liver became not only reasonable but co-operative and his heart took on the steady action of a high-powered automobile. His eye got bright, his back straightened and there came a bit of a swagger and lilt to his walk.

But, "even as you and I," he put in a week's hard work on a big job and used up his reserve. A pneumonia germ caught him and laid him flat. But this was the difference:

he did not die,—he was out again in three weeks. He was in training. A good heart helps fight disease.

HOW TO TRAIN THE HEART

The heart is a muscle. It can be trained like the biceps. It can be made strong, or it can be allowed to become weak.

During the last ten years I have frequently examined the hearts of the six-day bicycle riders at Madison Square Garden. They are enormous in size. They amaze my friends the professors of medicine, for they have never seen anything like them. Doctors as a rule believe that a large heart is a bad heart. It is true that many large hearts are bad. When a valve leaks the heart must work harder and grows larger; when the heart is neglected it may grow big and fat like the abdomen; when the arteries become hard and the kidneys fibrous, the blood pressure rises and the heart must work hard and grow large to meet the strain. Lastly, when the heart weakens it fails and dilates, also a large heart. A large heart may be good or bad depending upon its quality of structure.

But the heart that is too small is weak and feeble although still in a sense normal. The heart we want is one that is muscular enough and strong enough to carry a man through a long life and meet the emergencies by the way, but not big enough so that it constitutes a needless burden to itself.

TRAINING THE ARTERIES

The arteries can also be trained. They also have muscles. They dilate when the throb of the heart fills them with a quick rush of blood. They contract upon the blood mass and make it flow ahead in the interval between the beats. In ordinary daily life they throb but little and their walls tend to become limited in movement.

Muscular exercise makes them dilate and contract much more than ordinarily. The muscles in their walls contract and relax just as do the muscles in the arms and legs and in just the same way they refresh and cleanse themselves by their own activity. Exercise therefore tones up and strengthens the arterial walls. It keeps them young. "A man is as old as his arteries" is a very true saying and one of the best ways to keep the arteries young is to exercise them. This is an important point that has just come into notice in the medical world.[1]

In another way exercise helps the arteries. Hardness is caused not only by stagnation but by poisons circulating in the blood. These may come from alcohol, tobacco, syphilis, or most commonly from the intestinal tract where food ferments and decays. As we have seen, some of our exercises are especially designed to prevent this.

The action of the arteries in contraction and expansion is essential to the efficient use of the body. They control the distribution of the blood. The heart merely pumps

[1] See Bibliography in Appendix.

while they distribute. When we want more blood in the muscles the arteries in the muscles expand while the arteries inside the trunk contract, to supply the blood that is needed. When we have a good meal, the arteries in the outside of the body contract while those around the intestinal tract expand. Sometimes this causes a sensation of chilliness and gives an explanation to the quaint old saying, "If you eat to be cold, you will live to be old." When we wish to go to sleep the arteries and the veins in the abdomen relax and much of the blood goes to sleep too.

Muscular exercise trains the arteries, insures the proper distribution of the blood and reinforces every activity of the body.

EDUCATING THE VEINS

Varicose veins occur around the ankles and legs of people who stand still at their work for long periods. They are hardly ever found in people who walk about in their work and do ten times as much labor. This is because the rhythmic contraction of the muscles of the legs keeps the veins healthy and helps to push the blood up into the body towards the heart.

There is one set of veins the health of which is of greatest importance and these are the veins of the abdomen surrounding the intestinal tract. They form the splanchnic pool where the blood rests at night and where it stagnates when people are only half awake all of the time. When these veins are strong they contract when people stand up

and the blood is kept up under good pressure in the head. When they are weak and relaxed, the brain is robbed of its blood supply and people faint, just like the rabbits referred to in the last chapter.

When the muscles of the abdomen are strong, trained by the trunk exercises just described, they help the veins squeeze the blood upward, but the veins themselves must do a great deal of it. There is no way of training them to be strong more efficiently than by muscular exercise, although we can do a great deal by the proper use of hot and cold water bathing and spraying.

A well-trained set of abdominal veins is the basis of all endurance. It has been found that heart failure, frequently given as the cause of death, is usually not heart failure at all: it is vein failure. The heart is willing enough to go on pumping if it only has blood to pump. People die in many diseased conditions because the veins of the abdomen have become paralysed and the man simply bleeds to death in his own abdomen. This is one of the newest and most promising chapters that have recently been written in the science of medicine as it deals with the basis of strength, health and efficiency.[1]

It has also a great deal to do with happiness. When the spirits fall the blood pressure falls and the whole body droops. This is because unhappiness relaxes the nerves which control the abdominal veins. Happiness, on the contrary, stimulates the sympathetic nervous system

[1] See Appendix for reference.

which controls these veins. Happiness also increases respiration. It leads to laughter which anatomically is a respiratory exercise, a rhythmic contraction of the diaphragm and a massage of the liver. We have seen that the diaphragm "pats the liver on the back" when we have a hearty laugh. Thus it will be seen that the most important muscles of the body are those which control the circulation, the heart, arteries and veins.

DIGESTION

When we exercise and a muscle contracts it uses up both food and oxygen. Oxygen must be brought by the heart and arteries to the muscles from the lungs. The food must be brought by the same route from its storage place in the liver and this in turn as we have explained in Chapter II calls upon the stomach and intestines for activity. This is the way we get hungry and this is the reason that well-to-do people nowadays seldom know what hunger is. The supply of food so far exceeds the demand that Nature never has to send in a call for a supply. One of the happiest sensations that man can experience is that keen eagerness of tissue which pervades him as he comes in from a long hike, an afternoon of golf, a horseback ride, a bout of boxing or tennis, washes up and sits down to a good meal. This is one of the joys that result from health and pledge its continuance.

The best gastro-intestinal tonic is exercise. In fact, there is no way we can normally stimulate the stomach

and intestines except by exercise. The body is fifty-five per cent or more made up of muscle. The alimentary canal with all of its glands, the liver and the pancreas, were designed to support an active, not a sedentary, body. If this alimentary factory is run only on half time there is no wonder that all the little workers, the countless cells that make up the structure, become lazy and get into trouble. As the old Sunday School motto has it, "Satan always finds mischief for idle hands to do."

Nine-tenths of all human ills, it has been claimed by some authors, are due to intestinal stagnation. We agree with the conservative estimate that the majority of diseases and deaths are caused by intestinal deficiencies which can be prevented by proper muscular activity and proper food. It is certain that over half of the diseases of the circulation which have been referred to arise from this cause. Therefore, for the sake of the prevention of organic disease of all varieties and the extension of our years to their fullness, take exercise which affects the organic equipment.

ENDURANCE

Nobody desires to be merely just free from disease. We wish to work, strive, produce, and overcome obstacles. We wish to amount to something in this world. This means endurance. I do not mean necessarily the kind of endurance that we see in a Marathon race where the runner keeps on mile after mile for a half-dozen leagues

or more. I mean the endurance which enables a man to do six days' work a week and come up fresh and full of zest on Monday morning, for another week's work ready to meet all obstacles and overcome them, with an appetite for achievement.

This kind of endurance is based upon organic soundness. Not mere absence of disease but good, healthy, vigorous action superior to the ordinary degree of only average health. The liver and pancreas, for instance, can do an ordinary amount of work and supply enough bile and pancreatic juice of standard quality to dispose of the meal you furnish the stomach, and the meal will be digested fair enough. They will "get by." This is average health, but what we want is the liver and pancreas to leap with joy upon that meal and turn it into the finest kind of body food that was ever furnished to any human tissues; to rejoice in a good job done and then go back and make up some more good digestive fluids for the next meal.

This is health plus. It is to be obtained only by wisely following out the best health science we have. This includes good vigorous exercise. Exercise, in short, trains the whole set of internal organs to do their work better than ordinarily well and it permits the delivery of a greater amount of work and a better quality of work every day of life.

ORGANIC EXERCISE

To make the internal organs work and grow strong we should select the best exercise for the purpose just as we

select the best exercises, Churning and Pumping, as abdominal exercises when we wish to massage these organs. Now we wish to make them work and it is high time.

The best exercises for this purpose are like running. Running is simple. It does not have to be learned and you do not have to use up a great deal of effort in making the movement go right as you do in complicated gymnastic exercises. All other exercises which are simple, natural and easy have this advantage. We get the effects of muscular contraction without nerve strain.

Running also involves large muscle masses. It uses the big muscles of the thighs, hips, calves, trunk and shoulders as well. Almost fifty per cent of the body weight is thrown into activity, oxygen- and food-consuming activity. No wonder running calls upon the heart and respiration so quickly for the distribution of new supplies. Movements of the arms alone are poor exercises for this purpose; even if they are very rapid and intense they could hardly rival running in physiological effect. Large muscle masses, therefore, should be used.

Running is rhythmic. Great muscle masses are contracted and relaxed in constant rhythmic succession. There is no more pause than there is in the movement of a pendulum. This has a splendid effect upon the muscles for it makes each one of them into an active blood pump, sucking life-giving fluid into itself and squeezing it out again with each contraction and relaxation. Exercises which call for the holding of one position for even a few

seconds interfere with the pumping action of the muscle and hinder its nutrition. For this reason they are exhausted. In spite of this fact some "systems" of physical training actually call for continued tense contractions of the muscles.

Exercises for physiological stimulation of the organs are best of a rhythmic character. For this reason a little running is an excellent thing to put into the daily morning schedule after the body has been prepared for it. At the beginning, thirty-two steps is enough; sixty-four is sufficient for anyone, for it must be remembered that we haven't yet had breakfast and we should not push the body too hard. The height of idiocy is exhibited by some athletic trainers in taking their athletes out for a run before breakfast. More than one man has been damaged by vigorous tennis or bicycling before breakfast. Active exercise is a daily necessity, but not at the wrong time.

Running can be varied to make it more vigorous by raising the knees high up in front; touching the hands as in the knee raising exercise. It can be varied indefinitely or it can be made more interesting by changing it into rope skipping, which is one of the professional pugilist's favorite ways of getting into condition. But at best, running in one's bedroom is not exactly a joy-producing way to start the day. If we can get something that will be just as good and have a little fun at it, we can get our result and have a good time, too, and we believe thoroughly in having a good time.

THE DANCE

What singing is to speaking, what laughter is to breathing, so is dancing to exercise. When there comes sudden good news people dance for joy, they dance to celebrate great occasions, they dance to express the pent-up vitality that unexpected joys bring to the surface. Dancing is an expression of bubbling-up happiness coming out through the tissues in rhythmic motion.

Happiness, like other emotions, is never complete until it is expressed. We never fully enjoy a joke until we laugh at it. We are never really afraid until we turn to run away, nor completely despondent until we break down and weep. To be happy fully, do the thing that expresses happiness and you will get the reward of the thing itself rebounding from its own expression.

For this reason we have turned the run into a simple little dance-like exercise beginning quietly and winding up in a climax. The Pep Hops were first used, I think, in the High School of Commerce in New York City. They begin with eight hops on one foot, eight on the other, four on one, four on the other, two on one, two on the other, and then four running steps to a stop. One has a sensation of winding up with a flourish and the final stamp of the foot seems to send a thrill up the whole spine.

It can be done to music. If you have no phonograph pick out a popular song that fits the rhythm and sing it to

yourself as you go along. If you get ambitious, do a preliminary sixteen counts with each foot before the eight.

The earliest dances that we know anything about were developments of the walking run. The American Indians of today in some of their dances start by walking slowly around the fire; as the music quickens the pace gets faster, each foot after it strikes the ground is raised a little in a kind of hop, an extra accented beat. Faster still, each step has become a double hop: one, two! one, two! one, two! This is the elementary Indian dance step. It is varied infinitely, sometimes with movements of great intensity.

The Indian step can be used about the room in the morning if you wish. Pick up a ruler, turn it into a tomahawk and flourish it, scalp if you like in imagination a half a dozen pale faces who may become your easy victims because they do not take exercise in the morning.

THE SIDE ROCKER

The Side Rocker, as described in Chapter IV, is an interesting variation of the Indian step which has a charm all its own. Begin with two hops on one foot, raising the other high to the side. Then change the feet, raising the other leg high. When this pendulum gets started it goes on by itself and you will have to hold yourself down to thirty-two counts. Try one hop instead of two as a change and see how you sail along.

FORWARD ROCKER

This is a little bit harder and it will give you something to practise. When you learn it you have one of the steps of the Irish Lilt, the first folk dance that was introduced in the schools of New York City and practised by many thousands daily as a combination of fun and exercise.

Position: Raise the right leg in front, with the toe neatly pointed.

1. *Displace.* Give a little hop in the air and at the same time slip the right foot into the place where the left foot was and raise the left foot *back*, thus "displacing" it.
2. *Hop.* Hop on the right foot, the left still back in the air.
3. *Displace.* Give a little jump in the air and swing forward to the first position, resting on the left foot as you were before with the right foot up in the air.
4. *Hop.* Hop a little hop on the left foot, keeping the right foot in the air.

Now go ahead, rock backward and forward just the way you did the rocking from side to side. Try it now starting the left foot up in front.

Thirty-two counts. For a change hop only once instead of twice on each foot. You will like it.

SWING STEP

This is a hop and swing step. Take the same position you did for the Forward Rocker, resting on the left foot, the right foot up in the air.

1. *Displace.* Displace foot backward just as you did in the Forward Rocker.
2. *Hop and Swing.* Here's the trick. Swing the left foot (now the back foot) past the right foot until it is way out in front and well raised while the right foot is doing a little hop. These two counts form a hop and a swing. The next two counts are just the same only starting left instead of right.
3. *Displace.* You now find your left foot forward. Give a little hop and displace the right foot backward.
4. *Hop and Swing.* Swing the right foot forward as the left foot hops. Repeat the hop, swing, hop, swing, and you have another happy dancing step added to your motor repertoire. Thirty-two counts.

THE IRISH KICK

In this step you take four hops on one foot while the other foot is flirting around and doing stunts.

1. *Toe.* Hop on the right foot while the left toe touches the floor off to the side with the heel pointing to the sky. You will have to turn your body a little bit to get the heel way up.
2. *Heel.* Hop again and turn the left foot with the heel down this time where the toe was, and the toe now pointing to the sky.
3. *Cross.* Hop again on the same foot and bring the left foot with the heel across the instep of the right foot.
4. *Kick.* Hop again while you kick the left foot toward the sky, three-quarters forward,—nor', nor' west, as a mariner would say.

Now comes the trick. On the next hop you must get the left foot underneath you ready for its turn to do four little hops while the right foot stretches out to the side with the toe pointed down, beginning the first of its four little acts. On the next hop, the right heel goes down. On the next it comes across the instep and on the next it kicks just as the left did. Then the left foot has its turn again and again the right foot and you have finished sixteen counts.

These little dance steps are enough to start you along the line of making up dances for yourself, and you should do this as a means of developing your body and giving your soul a chance to come out and have a good time.[1] Enlist the services of your phonograph. You can get folk dance records at any store, but best of all make your own folk dances.

THE BREAK

Here is a little hint: You do not wish to stop every time you change from one step to another, so you will use the Irish "Break," an interlude of four counts. Start the Break in whatever position you find yourself at the end of twelve counts. It has four counts of its own. On the first count, jump to the stride position with the feet apart about fourteen inches. On the next count jump the feet together clicking the heels, on the third hop, swing the left foot backward (or the right foot if you have been doing a left sided exercise) and on the fourth count swing the left foot forward as you hop on the right and you will be ready for the start of any other step you wish. There is a lot of fun in this and you might just as well get it.

TESTS

Everybody should know how strong they are, how healthy and how vital. Until recent years we have been unable to test physical condition with any degree of

[1] Get *The Folk Dance Book*, A. S. Barnes Co., New York.

accuracy. It is true we have listened to the heart, lungs, examined a drop of blood to see how much hæmoglobin it has in it, and we have thumped and listened to the various organs to see if they were the proper size and texture, but we have not been able to make tests of vitality. At first we gauged the measure of a man by putting a tape measure around his biceps and his chest. This was known as anthropometry, but it was soon found that mere size, though significant, was not everything.

Then we tested the feats of strength and endurance such as pulling up on the bar, squeezing and pulling a dynamometer, running a mile or more and noting the time. These tests went further, but it was inconvenient to half kill a man in a tremendous effort or a long endurance test to find out how healthy he was.

BLOOD PTOSIS TEST

One of the most recent tests that goes to the roots of vitality is known as the Blood Ptosis Test.[1] This has been referred to before. To be in perfect condition you must have a blood pressure from eight to ten points higher on standing than it is on lying down, and a heart beat not increased any more than four beats to the minute on standing. This test has been used for a number of years to guide the up-to-date scientific athletic trainer in handling his athletes. If he knows his men well, by the use of this test he can estimate closely how fast they will run,

[1] See references in Appendix.

THE SKY LIFT

A Static elevation exercise which gives the sensation of being bodily lifted off the ground. As in the Air Push the wrists must be bent sharply. If done well it expands the chest, straightens the back and raises the internal organs.

THE AIR PUSH

A Static elevation exercise which lifts the body and unconsciously puts one into the attitude of good posture. It gives the sensation of repelling the force of gravity. A modern application of a principle which was perhaps known to the ancient Egyptians.

PUMPING

Abdomen in, chest out.

This is the position in which "pumping" was first introduced because the abdominal wall is relaxed and can easily be pulled in.

PUMPING

Chest in, abdomen out.

The athlete's strong abdominal wall will not permit bulging even when he tries to push it out. His relaxed position is better than most men can attain with their best muscular effort.

REVERSED BREATHING

An unique form of breathing, difficult to accomplish but producing a high degree of aspiration effect upon the abdominal organs. The position in which the lungs are filled with air despite the flexion of the body.

REVERSED BREATHING

The position of complete *expiration*. The air has been squeezed out of the lungs as fully as possible at the same time the chest is *raised*. Note the slim waist, high chest and the utilization of the ancient "wrist cue" to aid elevation.

THE SIGMOID APPENDIX SPECIAL

An excellent intestinal tonic. Note the position of the fist, well down in the groin pressing on the sigmoid flexure of the colon. This can be made more effective by pulling down the knee with the opposite hand, like a nut cracker.

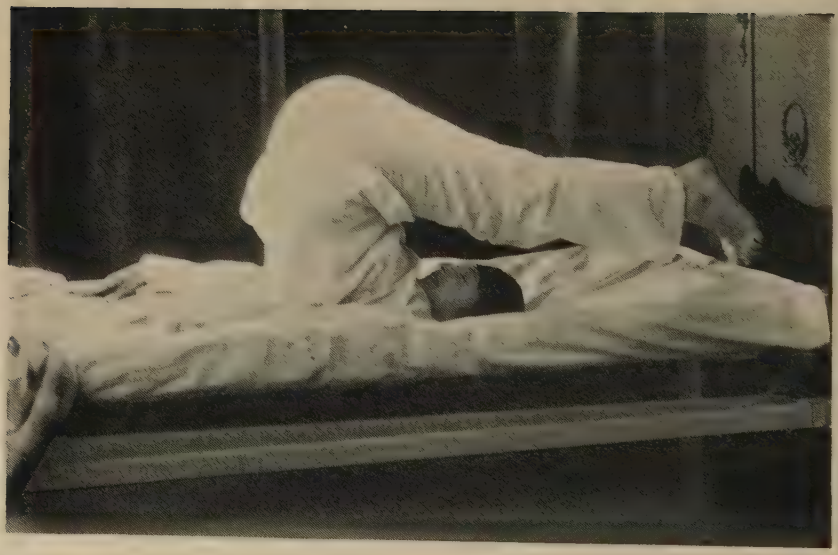
THE CROSS OVER (see page 92)

An internal clothes wringer which massages the abdominal organs, twists the spine and relieves many a backache.

THE "L"

(Rectus abdominis test No. 4)

The fourth test of abdominal muscle strength. When you can do this and hold the position without a quiver for ten seconds with a smile on your face you possess a good strong abdominal wall.



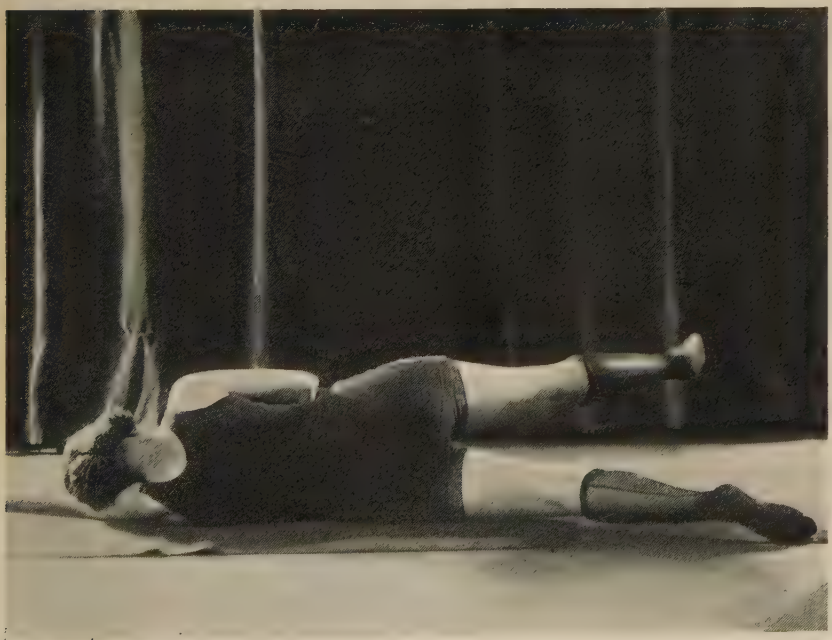
THE TOUCH BACK

(Rectus abdominis test No. 3)

The third test of the strength of the abdominal wall and general flexibility. It cannot be done it there is too much fat in the way—A splendid exercise in itself.

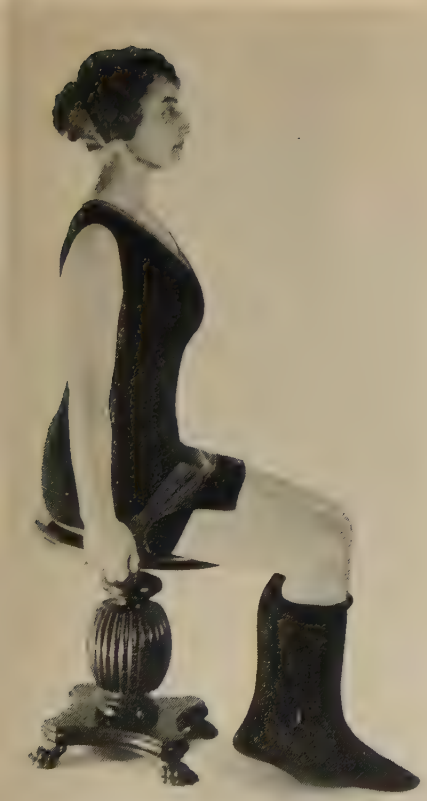
THE SCISSORS (Front view)

A vigorous exercise welding the trunk into one solid flexible column. Note the relaxed arm used as a pillow and the one finger support for balance.



THE SCISSORS (Rear view)

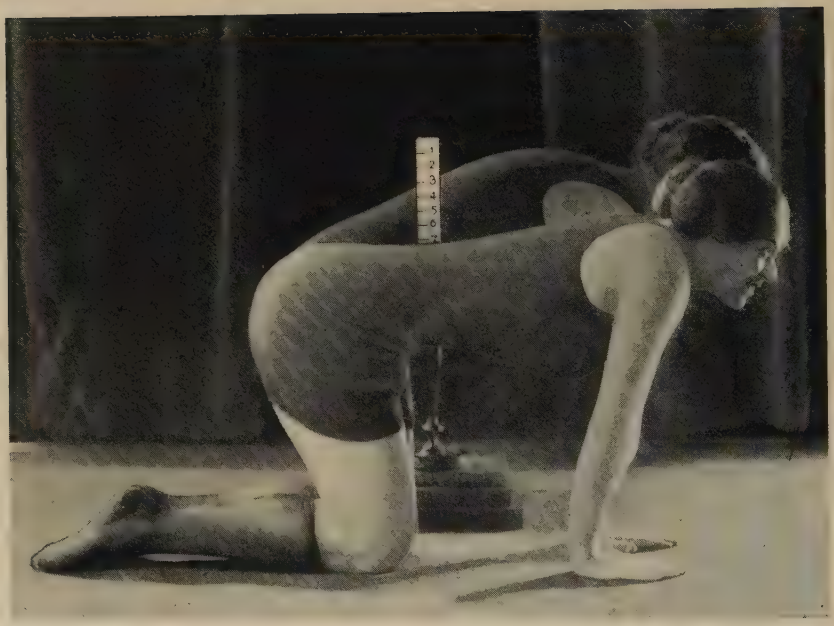
One of the most valuable advanced exercises for women. It should be begun gradually and used in moderation at first, for, while it does great good, it is hard work.



LEARNING TO CHURN

The forward position. Head up, chest up, ady to bend the body in a curve to the ht on its way to the backward position.

The backward point in the circle of the abdomen. Ready to make a curve to the left as the trunk comes to the forward position.



THE CAMEL

Churning in the old biological position, on all fours. All the organs hang from the spine in their original position and many of the kinks are taken out of the colon.

N-E-W-S

One of the best and simplest internal corset builders. This illustrates the North-South part of the movement. Note especially the vigor of the backward bend.

N-E-W-S

The East-West part of the movement, good abdominal massage and a waist line reducer.

THE CROSS KICK

A vigorous, trunk-twisting flexing exercise, which will put strong, elastic, tissue into the flanks, and reduce the girth of the waist and hips.

THE IRISH KICK

(Count No. 1. Toe down

THE IRISH KICK

(Count No. 4. The Kick)

Good fun when you get into the swing of it and really dance. It gets into the system and ripples around happily all day.

GOOD POSTURE

A lieutenant in the U. S. Marine Corps in good posture. Head up, chest up, abdomen flat at his full height and every inch a man.

BAD POSTURE

Note the decrease in total height and the generally tired look of the whole body.

GOOD AND BAD POSTURE COMPARED

(Courtesy of The Macmillan Co. From the *Pedagogy of Physical Training* by C. Ward Crampton, M.D.)

GOOD AND BAD POSTURE

A physical training teacher who cannot slump very much.

THE HEN PECK (Exercise)

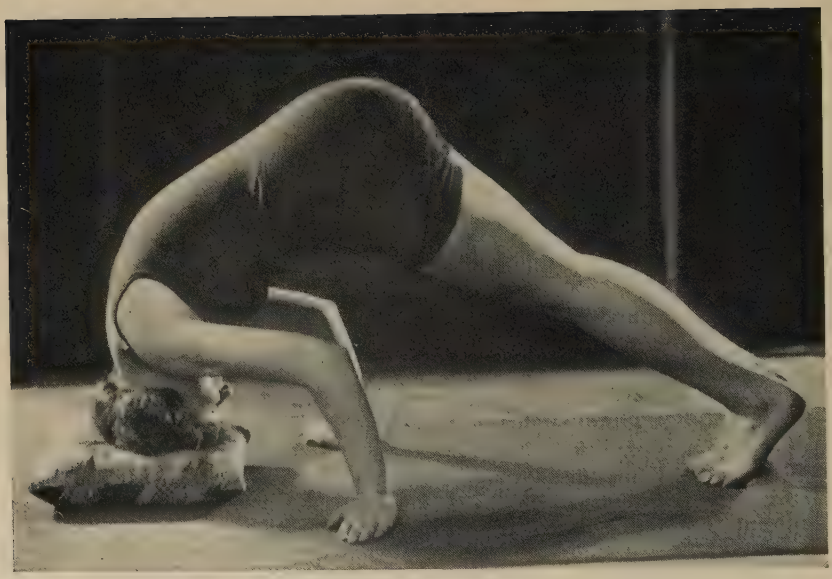
Reaching for a kernel of corn on the right shoulder. Note the contraction of the muscles of the neck. While the left side of the neck is stretched the right side is compressed and the whole neck is massaged and strengthened.

RESTRICTED ROTATION

The chin is kept away from the hand and the muscles of the back of the neck are exercised in a shortened state to make them become short and strong.

THE THREE-QUARTER BRIDGE

The proof of a good neck and back, if you can make this bridge "roll." This is not to be attempted until the neck is well trained.

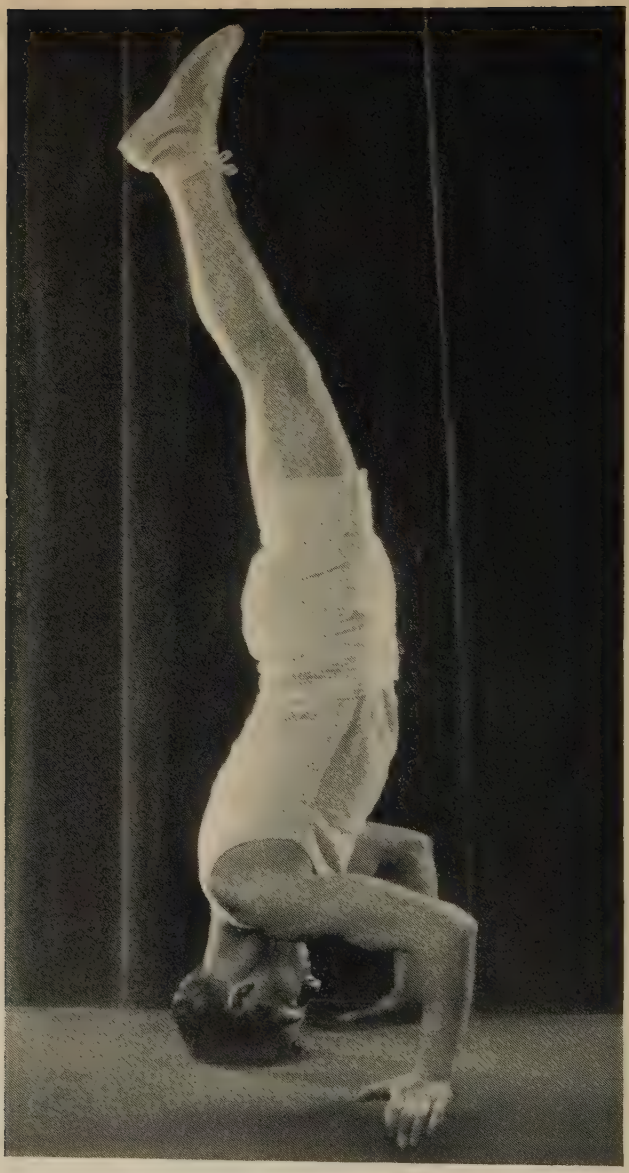


THE BACK UP

Preliminary exercise to the head stand giving you an entirely new point of view. Get accustomed to it before trying the next stage—the Knee Stand.

THE KNEE STAND

Half way to the head stand. Be sure to get the knees neatly settled on the elbows; then you can be quite comfortable for some time in this position.



THE HEAD STAND

A goal for the ambitious seeker after health.

THE FRONT WALL-TEST

The chest touches the wall; the nose and waist-line do not. Note the hand which must be pressed to the wall by the thigh.

THE BACK WALL-TEST

There must be only enough room between the hollow of the back and the wall for the flattened hand. If there is more room than this the hollow must be decreased.

JACK DEMPSEY

A perfectly proportioned physical super-man.

USING THE STAR-GAZER TO HELP TO CORRECT THE WHITE COLLAR SLUMP

A typical 40-year-old executive getting in training for another 40 years.

(Courtesy of *The Popular Science Monthly*

THE HOUSEWIFE

As she often feels. Tired, weak, downcast. Note the wrinkles in the costume. There are more wrinkles inside.

THE HOUSEWIFE

As she should look, and we trust, shall always be—capable, strong, erect.

SELF TESTING

A splendid muscular abdominal wall, well contracted. The chest should be 20 per cent greater in girth than the contracted abdomen. You have two ways to reach this proportion. Increase the chest or decrease the abdomen, —do both.

SELF TESTING

Abdominal Expansion is as bad as Chest Expansion is good.

how well they will play football or basket ball before the hour of the competition, and he can detect at once any break in training or the slightest lapse into dissipation. Staleness will also show itself.

In use in the physician's office the Blood Ptosis Test has helped to answer the question "Is the patient really sick or is his trouble imaginary?" And during the course of treatment, it answers the question "Is the patient really making progress toward health as the result of treatment."

The average business man is only 60% efficient by this test and those who register over 90% are very rare. The 100% men and women are those who have a good physical endowment and know how to keep themselves in good condition. They are in possession of good health in great abundance.

This test can be given by any physician you go to for your health examination.[1]

PULSE RECOVERY TEST

There is another test which gives valuable information as to the efficiency of the nervous system and the circulation particularly, and this of course means the whole body. It tells whether or not you are in training. It is known as the Pulse Recovery Test. It consists in doing a certain amount of physical work and then noting how much the pulse rate rises and how long it takes to get back to normal. It is conducted as follows:

[1] See Appendix for Percentage Scale.

The pulse rate is taken while standing still. Stretch the hands down back of the thighs with the fingers half bent; then run in place, the heels touching the fingers at each step at the rate of one hundred and eighty steps to the minute for thirty seconds for Test A and sixty seconds for Test B. Always try Test A first and do not try Test B until you have a 100% record in the easy test.

The physician then with his watch ready counts the pulse beat for each five seconds and calls them off to the nurse who writes them down. The first five seconds may show twelve or thirteen beats (multiply this by twelve to get the rate per minute), the second eleven, the third ten, the fourth nine, the fifth eight, and so on, gradually decreasing until the pulse gets down to its previous rate. The body has done its work and has readjusted itself again to just the plain simple task of standing. The length of time it takes should be less than sixty seconds. Sixty seconds gives you 100%. Deduct one per cent for each second it takes over the sixty and you have your rating. For instance if it takes 1 minute and 25 seconds for your pulse to return to normal your rating is 25 less than 100—or 75%. It takes some skill and practice to do this accurately even for a physician. It is simple though, and tells the story. Perhaps you can do this test yourself with the help of two friends.

But Test A is very easy. It is only for beginners.

The real test is for a man to run in place for sixty seconds instead of thirty and then, if the pulse returns to normal in a minute, he can get a 100% rating. This is still a very low standard, for an athlete, boxer, wrestler or runner in perfect condition will return to normal rate in less than twenty-five seconds.

The tremendously efficient body machinery of the six-day bicycle riders was remarkable in this respect. After being on their machines grinding out mile after mile for a half or three-quarters of an hour, I have taken the pulse immediately on stepping from the machine and as a rule in less than twenty seconds the pulse rate would fall from a hundred and twenty down to fifty-six or sixty, perfect evidence of a remarkably efficient piece of vital machinery, too specialized, of course, for you or me who do an all-round kind of day's work. Naturally these standards do not apply to ordinary men in ordinary life.

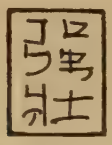
It is worth while to check up your condition by both the Blood Ptosis and Pulse Recovery Tests. Do not be surprised or disappointed if you measure less than you think. Put yourself in training and work your condition up to at least 85% or 90% for longevity and happiness follow closely upon a high rating.

CONCLUSION

Here we have a whole chapter devoted to the training of the body by exercise as the man in the street knows it, educating the internal organs to do their work well and

strongly and equip themselves for a long vigorous life. The earlier exercises affected the organic equipment from the outside. These last ones make it work. Do not imagine that you can do all this in thirty seconds' work in the morning exercise. While these exercises are marvelous in their efficiency there is no magic about them. To get into condition and keep in condition you need good sleep, fresh air, good food, hard work and a clear conscience.

We have now gone through our six morning exercises and have reaped all the benefit that we can get by exercising at this time of day. It remains only for us to put ourselves in a position that will hold these benefits as long as possible. This is done by the next exercise.



CHAPTER XI

THE STAR GAZER

EXERCISE SEVEN

CONTENTS

HOW DO YOU STAND?
CŌME STATÉ?
ON WHAT DOES GOOD POSTURE DEPEND
VALUES OF THE STRONG NECK
THE STAR GAZER
NECKACHES AND HEADACHES
NECK FLEXIBILITY EXERCISES
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STAND ON YOUR HEAD
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CHAPTER XI

THE STAR GAZER

HOW DO YOU CARRY YOURSELF?

"*Comment vous portez vous?*" (literally How do you carry yourself?) is the French equivalent of "How do you do?" It as as old as the Latin tongue and an age-long recognition of the tradition that human well-being is definitely related to human carriage. As a man carries himself, so is he.

"*Cōme staté?*" ("How do you stand?") is the way the Italians, the direct descendants of old Rome, put the question today. This tradition that the posture of a man reveals the well-springs of his health, happiness and efficiency is founded upon good biological science. If the head is held high, the back straight, the chest up, we know that there resides in that man an abundance of vitality and power that must be based without question upon good health, and must absolutely reveal itself in all that he does

and which produces happiness and success. In a woman it is shown in the high, splendidly poised head and queenly bearing. It may be true that the man who hangs his head, whose shoulders droop and depress the chest has a splendid vitality, and the young woman with the forward-poking neck, protruding hips and flapping arms may yet be a fine specimen of the human race, but I doubt it and so do you.

Splendid, straight, high, strong, good posture is a sign of vitality and efficiency. Moreover, it is a pledge of the continuance of these qualities for it is the posture in which the body is at its best. It is the posture in which the mind thinks most clearly and most effectively, in which the soul expands and stretches to its fullest height.

The 100% man has good posture.

ON WHAT DOES GOOD POSTURE DEPEND?

It depends first upon a smoothly working organic equipment, well massaged, well toned up by exercise as we have seen in the foregoing chapters. Next, it depends upon the utter absence of disease; not even the first hidden forerunners of disease which sap vitality before the doctors can recognize them, can be present. It depends next upon a pride in ourselves based upon a knowledge of our own dignity and worth, although a few criminals as part of their deception have learned to copy the appearance of honest men. It depends upon *habit* and, as we have seen, a good deal rests with the abdominal muscles, a firm

floor of the vital compartments which must hold up the whole organic outfit. Most of all perhaps, good posture depends upon a strong neck.

VALUES OF THE STRONG NECK

If the muscles of the neck are strong enough to hold the cervical spine straight, the back straightens, the ribs are raised, the chest cavity is enlarged, the aspiration of the thorax increases and all of its resulting benefits accrue as we have seen. In the neck are four great arteries which bring blood to the brain and nourish it. The two great jugular veins return the blood to the chest. The thyroid gland is saddled across the front of the neck. It regulates the intensity of our life processes. If it is stimulated, every tissue speeds up and the heart beats rapidly; if it is depressed, stagnation of body and mind result.

Tucked away on either side of the throat, in a fold between the larynx and the vertical neck muscles, are three pairs of sympathetic nervous ganglia which, with the nerve centers in the neck portion of the brain, control the internal organic operations, respiration, circulation, digestion, secretion. In short, there in the neck are the offices of the business management of the whole body.

The neck is indeed an important part of the human body. Look at the men you know to be strong and successful and see what kinds of necks they have, for necks are as characteristic as faces. They tell the story of

weakness and power, vitality and illness, past and present, and even prophesy what is to come.

That neck which has fine, strong, muscular pillars on either side running from the ears down to the collar-bone, and powerful, muscular masses running from the back scalp down to the spine—that neck is indeed likely to be surmounted with a head worth while in this generation of high deeds and great events.

While the head controls mental operations, the neck seems to control or modify all physical operations and forms the essential connecting link between the body and mind. Thus it holds a place of critical importance. For a host of good reasons, physical, mental and psychological, a strong neck is a great possession.

THE STAR GAZER

Once upon a time we had a thick cord of rubber elastic tissue running from the spine back of the neck which held the head up. The horse and dog have it yet, as you can see if you investigate. When we rose to the upright position we lost this ligament almost completely and we must now depend upon our muscles to hold our heads up. To get muscles that will do the job for the hours of a full day's work we must utilize one of the great axioms of physical training hitherto referred to, "Muscles tend to stay in the position in which they are exercised." Therefore we should exercise the head and neck in the position in which we wish them to stay. For this reason the last four

counts of the "Star Gazer," which has eight counts in all, are devoted to exercising the muscles of the neck in the shortened position.

"The Star Gazer" recapitulates the progress of the race. It starts with the eyes looking at the ground, with the weight of the laboring hands holding the head down. On the first four counts this weight is gradually raised and pushed back, bringing the face upward toward heaven. The whole back tightens and straightens from the neck to the hip. The chest is raised, the shoulders settle down into their places and there steals through the body a sensation of rising from the ground as if about to soar forward and upward. This position is held while all the tissues adjust themselves into a splendid harmony in accord with each other, life and the universe.

All of the work of the previous exercises becomes assembled into a unified completeness. Body and soul unite into one strong, aspiring individuality, instinct with power and ready to be launched upon the events and labors of the day.

The first four counts of "The Star Gazer" are necessary to provide muscular relaxation and circulation. The last four may be devoted to holding the position or to turning the head slowly from side to side, as it were observing the constellations from Polaris to Orion, or, as a second variation, bending the trunk gently from side to side.

This is the last exercise of the series. It is a scientific elaboration of a normal movement found in nature. It

has many of the elements of the "Stretch" with which the series began, developed, however, to far greater power.

NECKACHES AND HEADACHES

Headaches are often not in the head at all but in the neck. The next time you have a headache, see if a gentle massaging of the muscles of the neck, especially where they are implanted into the bones of the skull, will not change the condition entirely. Follow this up with an exercise or two which will change the whole circulation of the neck and head and if it is one of a series of a certain variety of headaches, it will be relieved.

NECK FLEXIBILITY EXERCISES

Necks get stiffened from pain as well as disuse.

When I was a boy one of the Bible phrases that made a great impression on my infant mind was "this wicked and stiff-necked generation" and the terrible things that were going to happen to them. I wanted to know what a stiff neck had to do with wickedness.

After practising medicine a number of years I commenced to find out, for a stiff neck is always the result of some physical sinfulness, ignorance or carelessness on the part of the owner of the neck. More stiff necks come from constipation than from drafts. The stringy, scrawny, weak neck of the invalid is the result of years of physical neglect, or what is worse, physical coddling.

Stiff, hard, painful necks must be cured by attention to

the alimentary canal, diet and general exercise as well as attention to the neck itself. But the neck will not get well unless we limber it up and when it does become flexible, lo and behold! we have conferred a blessing upon all the rest of the body.

Here is an exercise that was developed for headache, neckache invalids at one of our leading sanitariums by a physician who had real insight.

THE HEN PECK

The name of this exercise is no reflection upon the women who use it. Of course, hen pecking in married life is largely the result of pains somewhere in the body which find expression in complaints and browbeatings of anyone who happens to be near, usually the husband. The homeopathist believes that like cures like, and my grandfather used to say, "Cure a dog's bite by taking a hair of the dog that bit you." By the same token you might very well cure hen pecking by Hen Pecking.

Position: Head up, take an imaginary grain of corn in the hand and hold it six inches in front of the mouth.

Make believe that you are a chicken and you want that grain of corn. Reach out with the head until you can pick it up with the lips and bring it in until the neck is straight, then look up, stretching the neck and letting the grain of corn trickle down the throat. So much for one grain of corn.

Take another grain in the fingers and hold it over the

right shoulder. Reach for it, pick it up, bring it in and let it trickle down the throat to follow its predecessor.

Next take one off the left shoulder. Keep at it until you have swallowed twelve grains of corn, each time reaching further and further away as your skill develops. If you wish to measure the neck before and after this exercise you will find that if it is too small, it will increase slightly in size. If it is too large, this is one of the ways of reducing it.

RESTRICTED ROTATION

There are many exercises which will loosen up the neck. Here is one that not only increases its flexibility but helps to stabilize it in its proper erect position.

Position: Put the fingertips together in front of the chin and pull the chin away from them as far as you can get it.

Movement: Make a circle with the chin, going to the left, down, right and up as large as you can, keeping as far behind the palms of the hands as possible. This will strengthen, mobilize and shorten the muscles of the neck.

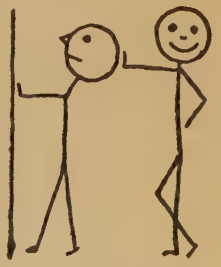
To those who have never tried these exercises they will be a revelation in the number of creaks, kinks, snaps and grinds that can come out of an ordinary neck. These are all due to weakness and stiffness. For this reason these exercises should be done only a few times at first. Afterward when stiffness and creaking diminish they should be

done from twelve to eighteen times. Then the chances are it will be, Goodbye pain, Welcome strength!

THE HEAD PUSH

After the neck has had two or three weeks of the light exercises given in the Star Gazer, Restricted Rotation and Hen Peck, it can meet stronger tests. In the Post Graduate Hospital one of the quickest ways of developing strong necks is the "Head Push." It needs some accommodating sister, brother or husband to help you with this.

Position: Stand placing the hands on the wall, the arms outstretched and straight. The attendant places his hand on the back of the head (not the neck) as you let it come forward and downward between the arms. *The head should not be pushed down;* its backward course only should be resisted.



On the first four counts (just as in the Star Gazer) the head is brought slowly backward while the attendant presses his hand against it. On the fourth count it is as far back as possible and for counts 5, 6, 7 and 8 the position is held, pushing the head back against the hand as hard as possible and looking at the ceiling. This should be repeated from six to eight times. It should be varied by turning the head slightly to the left and to the right at each alternate eight.

Again, you can put one hand on the wall and place the

head *sideways* against the resistance of the attendant's hand, thus developing muscles of the side of the neck. This is a splendid introduction to the next exercise which is one of the most important described in the book.

THE BRIDGE

The muscles of every man, woman and child between the ages of six and sixty should be strong enough to do the Bridge. It is a feat that looks very hard and possibly dangerous. If, however, one has practised the foregoing exercises faithfully for five minutes a day for two weeks, he can feel reasonably safe that he will not even get a stiff muscle from his trial of the Bridge. Everyone who seeks good health in great abundance should bring himself up to the point of trying this, for it opens a new field of interesting and valuable exercises. Moreover, it is good fun to do.

The Bridge may be approached by easy stages. First lay a blanket on the floor or use the bed if you have a good hard mattress. Lie down flat, raise both hands forward and upward, continuing until the thumbs pass the ears. Keep going until you can lay the palms of the hands flat on the floor beside the head with the fingertips under the shoulders. Next, bring the feet in until they touch the buttocks, separated about two feet from each other. Now you are in position to take the various steps which lead up to the Bridge, each of which is an exercise in itself.

Ready for the Bridge

No. 1. Half Bridge.

Raise the hips. This makes a slanting bridge from the shoulders to the knees which might be called the Half Bridge.

Half Bridge

No. 2. Three-Quarter Bridge.

Raise the hips again and continue raising the shoulders so that the body rests on the head, the hands and the feet. This is a little bit more like the Bridge. It might be called the Three-Quarter Bridge.

Three-Quarter Bridge

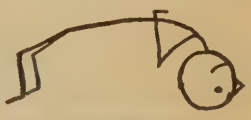
No. 3. The Bridge.

Do the Three-Quarter Bridge, then push the head back until you are looking at the opposite wall with the weight resting on the top of the head, the hands and the feet. This is the Bridge.

Now go on and develop this exercise, making it harder and harder, testing yourself out as you go along and building a neck that is really worth while.

No. 4. The Free Bridge.

This is the position a wrestler takes to prevent his shoulders being pressed to the mat when he is thrown on his back. Do the Bridge as described above and then fold the arms across the chest. You are resting comfortably on the top of the head and on the heels. At first when you come down from the Free Bridge it is wise to put the hands back into position under the shoulders and

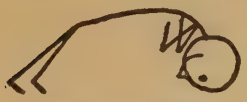


The Bridge

let yourself down slowly. Later you can come down any way you like. Try some variations. Rock the head forward and backward and from side to side.

No. 5. The Rolling Bridge.

This is an achievement. You might think it is impossible for you ever to attain it. You would have been encouraged and enthusiastic if you could have seen a seven-year-old poor little rich boy who had the appearance and consistency of a wet dishrag two months previous make himself into a Bridge and turn it over into a beautiful Rolling Bridge again and again before an admiring group of his fellow campers. Or perhaps you would have been more interested to see a sixty-year-old grandmother who had been an invalid for fifteen years, in three months' time develop a Bridge that would have been a credit to anyone and in the meantime get back to her energetic, go-ahead direction of a half-dozen of her pet charities.



The Rolling Bridge

Unless you are tubercular, half-dead or too fat you can (after a physical examination to safeguard you) aspire even to the Rolling Bridge in time.

Position: Do the Bridge with a nice soft place for the head.

Fold the arms, lift the left leg, twist and turn the body toward the right until you have turned over completely, reversing the Bridge and resting on your forehead and your toes.

This is the Reversed Bridge. Now don't stop. Con-

tinue in the same way, lifting your right leg, twisting the body toward the right until you have turned over again and are in the position of the regular Bridge. This is the Rolling Bridge. You can keep on going until you have walked a complete circle around your own head and when you have done this you have graduated with honors in the class of physical culture and you have donated to yourself an insurance policy which will pay dividends of good health, increased efficiency and length of years at the cost of a moderate premium of a few minutes a day.

I am aware of the fact that the fat, the lazy and the weak will sit back in their fatness, laziness and weakness and say that this exercise is too hard; and with a long, grave face state that "this exercise is likely seriously to injure the neck." I personally have taught many hundreds of people how to do this and many thousands have been taught by my pupils and no injury has resulted with the proper preliminary training of other exercises, and with the safeguarding of a physician's examination no one can possibly be hurt, and only the greatest improvement can result.

A strong neck can be used in other exercises. It is a great asset for children. Literally, and in perhaps a humorous sense, they are less likely to lose their heads. They are steadier, better poised and stronger in any movement of the body and mind. It will help the lad in his wrestling at school and in college. It will help anyone to do the set of exercises that follow.

THE HEAD STAND

One of the values of the Camel exercise as described in Chapter IX was due to the assumption of the old biological position with the trunk horizontal. This relieved the abdominal organs of the drag of gravity. The same advantage was obtained for all the abdominal exercises where lying on the back. Recently we have applied the principle even further. If it were advantageous to relieve the body of the effects of gravity while we were exercising, why not get gravity to help us replace the organs which have slumped down into the pelvis? Why not turn the body upside down and let them slump up, as it were, into their proper places? We have done this in many exercises not described here but used medically with beneficial results.

A strong neck will enable one to put himself into a position where gravity will completely reverse the strains of the abdomen and the circulatory effects as well. These exercises are particularly valuable for any congestion in the lower part of the abdomen as well as for ptosis.

Standing on one's head looks impossible to the ordinary person. Strange to say, not one boy out of five ever learns to do it and in the cities not one boy out of ten. I doubt if one woman out of a thousand has ever done it. Yet within the same limits noted under the Bridge, everyone can do it. As in the Bridge, it is important to get the right method. The following has been studied out with the greatest of care.

PRELIMINARY EXERCISES

The first thing you learn seems entirely disconnected with the exercise, completely remote from anything like a Head Stand. Nevertheless, as I tell my son, "Do it: we will discuss it later and you will see how important it is."

Now, stand up straight, lean over and take each knee cap between the thumb and forefinger. Note especially where that thumb rests. Move it around and explore the little hollow that you find there. Remember where to find this hollow because you will need it later. Now lean down further and explore the same hollow with the elbow and see how it feels. With this preliminary you are ready to start learning the Head Stand.

1. Kneel down on a heavy blanket with a pillow ten inches in front of the knees.

2. Place the hands just outside the knees and close to them. Your natural impulse is to place the hands at either side of the pillow. This is the small boy's mistake. It is fatal to success. You will never learn unless the hands are placed just right to make with the head a triangular base.

3. Put the head down on the pillow and get accustomed to this position. Come up for air and go down again three or four times until you are at home in the semi-inverted position.

4. Keeping the hands and head in exactly the same position (where they will remain for the whole Head Stand),

raise the knees off the floor, straightening the legs. Hold this position a few seconds, then put the knees down again and sit up. Practise this two or three times and this is usually enough for one lesson.

5. In the course of the next period of exercise go a little further. Put the hands in their proper places by the knees, put the head down and raise the knees. Now you avail yourself of your preliminary practice. In the position in which you find yourself you can see the elbow and the knee. Bring the knee of one leg up and place it on the elbow, making the elbow fit exactly into the hollow that you found for it when you were standing up. Now you see why you had to locate it first. Next, "walk" the other knee up to its elbow, raise the toes, and you are standing on your head and hands with much of the weight of the body resting on the knees which of course rest on the elbows. This is the Knee Stand. The practice of this position two or three times in one period is enough.

6. At the next period you can go further and do the whole Head Stand. Be careful to put the hands in the proper places, do the Knee Stand and then slowly raise the legs into the air until they are straight. It is best to have someone kneeling close behind you with his shoulder at your back so that you cannot fall backwards. If there is no one handy you can place the pillow close against the wall and if you go too far you will simply come up against the wall.

When you first do the Head Stand do not stand up

more than half a second. Come down slowly and try to place the knees on the elbows again. Resume the upright position by reversing the process: knees down, head up, and sit back on the heels. Practise this until you are perfectly comfortable in the upright reversed position and when you are quite at home in it you can do the various exercises which follow:

No. 1. Walking.

Make the legs go forward and backward as if walking on the sky. This is the inverted Scissors.

No. 2. Frog Kick.

Separate the legs and bring them together again.

No. 3. Scissor Twist.

Separate the legs and twist the body, rotating the legs from side to side.

No. 4. Head Stand—Knee Elbow.

This is the hardest of all. Try to bring the left knee down to the right elbow. Straighten up again, bring the right knee down to the left elbow.

The standing on the head position has been much used by W. Curtis Adams of the Pompton Sanitarium, The Adams Place, and also by members of a society who devote much of their time and effort to the attainment of physical and mental perfection by the study of the doctrines of the Far East.

TESTS OF GOOD POSTURE

Have you 100% posture? How do you carry yourself? Does your posture proclaim you to be a 100% man or woman?

It is worth while to find this out because no man is 100% until he has the physical frame which not only reveals but supports maximum vitality. There are various complicated machines and tests without end. The best of these are the two Wall Tests which measure you against a straight vertical line in front and in back.

THE FRONT WALL TEST

Place the toes against the wall. Place the hands in front of the thighs so that the palms point upward, and press them against the wall. The thighs are just a hand's breadth away from the wall but no further. Now the chest should touch the wall while the abdomen and the nose are from one and a half to three inches away from it. Of course if you have a large abdomen and you are in the habit of throwing your shoulders back to balance it, you can't do this. If you fail on this test study your architecture. Be sure to make the thighs press the hands against the wall for it is easy enough to cheat by pulling the hips back.

THE BACK WALL TEST

Place the heels, the shoulders and the head against the wall. Now slip the left hand in behind the small of the

back. If the fit is close you pass the test. If the fit is loose, you fail and you must straighten the lumbar spine until you can squeeze the hand. Most people can put two hand-breadths between the spine and the wall.

Passing these tests, however, only means that you are able to take good posture. It does not mean that you keep good posture all the time. Only good vitality, good muscles and good habits will give you this. When you have arrived at good posture as a habit, with the full force of a strong organic equipment smoothly working through the twenty-four hours, then you rightly may call yourself in 100% condition.

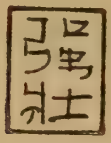
SUMMARY AND CONCLUSION

The great purpose of the seventh exercise is to consolidate the gains made by the use of the previous six exercises. It rounds out, completes and makes the series perfect as the number seven itself is perfect. It completes the cycle of exercises which was introduced by the stretch and which follows the development of the natural stretch, for the last exercise, the Star Gazer, is its final development.

The whole series have provided for the seeker after good health in great abundance a simple, easily understood group of exercises with which he can begin and a definite set of instructions which will lead him from exercise to exercise as his strength and prowess increase. In the last seven chapters there are exercises from which the weak-

est and most feeble can gain profit and others in which the strongest of athletes will find a test for his mettle.

Thus the series of Seven has gone through its gradual unfolding as the ancients unfolded the symbol of eternity, the circle, into an ever-turning epicycle, the symbol of man's increasing destiny.



CHAPTER XII

THE EXERCISE SCHEDULE

SUMMARY

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EXERCISE FOR DAILY LIFE
DAILY MORNING EXERCISE
DAILY WALK
THE WORK-OUT
THE AFTERNOON OUT-OF-DOORS

CHAPTER XII

THE EXERCISE SCHEDULE

FOR DAILY LIFE

The body and mind of man were made what they are by physical activity and the processes of mind and body connected with it. Our ancestors had to catch their breakfast before they could eat, and sometimes it was a perilous, fighting task. If they did not keep in good condition they could neither escape nor conquer.

Today we have the same bodily frame and organs of our fighting ancestors, but today we have all of science and the wisdom of the ages to guide us. In working out our physical salvation, we will remember with humility that we are human and recognize the rules of nature, but we shall add everything that modern science can give and bring this new wisdom into harmony with the old laws of the race.

THE STANDARD EXERCISE SCHEDULE

DAILY MORNING EXERCISE

7 to 14 minutes daily

Processes:

1. Gradual transition of mind and body processes from sleep to activity.
2. Neck and back muscles strengthened and a high head and chest obtained.
3. Abdominal muscles strengthened and toned. Abdominal auto-massage.
4. Circulatory stimulation and tissue tonic.

THE DAILY WALK

45 Minutes Daily

Processes:

1. Fresh Air.
2. Moderate stimulation of the circulation and effect upon the internal organs.
3. Mental and nervous regulation.
4. Recreation; mental rhythmatizing and regulation.

THE WORK-OUT

45 Minutes to one hour; two or three times a week in a lively game or horseback, etc.

Processes:

1. Vigorous stimulation of the heart and arteries, increasing their strength and muscular power.
2. Vigorous tissue and organic massage; increase in metabolism and developing margin of power.

3. Having a good time, renewing youth and companionship.
4. Perspiration.

THE AFTERNOON OUT-OF-DOORS

Golf or its Equivalent

Processes:

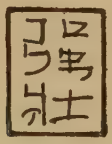
1. Fresh Air.
2. Moderate, long-continued circulatory activity and tissue reaction; development of endurance.
3. Increase in metabolism and stimulation of the intestinal tract; appetite.
4. Mental refreshment and normalcy under normal conditions—in the out-of-doors.
5. Game interest, recreation and companionship.

The foregoing schedule gives the standard for the adult, average man. For the woman the Work-out should be modified, and for the man over sixty as well. In fact, the exercise program should be thought out, adjusted and applied individually to the individual needs for everyone. This standard, however, if adhered to throughout a lifetime, will bring the best results and rewards in Health, Happiness and Efficiency. If it cannot be followed in its entirety (and we must admit that there are some, who for various reasons cannot follow it out), then there is so much loss and lack of result.

Every man should work out his own program.

No one should omit any part of this schedule without

due cause, for he will be assured that he is depriving himself of fun, profit and years. He should first of course enlist the services of his family physician, with the *health* point of view. If he knows of no such person, he should find one. Next he should make this a family matter, going over the problem with his immediate family. He should assay the resources of his community, consult with his friends and plan his life intelligently and wisely. Each one of the items in the exercise program deserves a volume on the subject, but this book is devoted mainly to the first item "Daily Exercise," the minimum essential which gives greatest returns for the least time and trouble expended.



CHAPTER XIII

WHAT EXERCISE DO *YOU* NEED?

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CHAPTER XIII

WHAT EXERCISE DO *YOU* NEED?

A young man of twenty-five came into the doctor's office complaining of just a "general kind of weakness," and being "run-down." In fact, he had always been puny but now he was thinking of getting married and had to get a raise, but "his boss didn't see it that way and wanted him to show some action." The physician put him through the usual tests and discovered nothing wrong. Yet something certainly was wrong with the man, even if his heart and lungs passed ordinary inspection. The physician was an up-to-date specialist on constitutional diseases and had the health viewpoint, so he went further. He took out a set of tiny flasks each containing the extract of some ordinary article of diet. Making little scratches on the patient's forearm, he put on each a minute portion of food extract. Nothing happened until after twenty minutes when one of the little scratches commenced to swell and became a large white mass. It was perfectly

clear that the particles of this particular kind of food caused a disturbance. In fact, it acted as a poison.

In this case it was a particle of oatmeal that caused the reaction and it was by this means that the physician discovered that the young man was one of those rare persons who had been poisoning himself by eating oatmeal faithfully from his boyhood up. With this article removed from his diet, and with a good exercise program, he became strong and well. (Yes—he got his raise, married and is living happily ever after.)

"ONE MAN'S MEAT"

Truly one man's meat is another man's poison. It is the same with exercise. Exercises as we have seen are very different in their effects and are good for different kinds of people. You should find out just what kind of exercise you really need. You should first get a thorough going-over by your health physician, and then put yourself under the care of a good physical trainer in a Y. M. C. A., a school or club. In default of this you should get a good book and study the matter out for yourself. You will not merely do the exercises that are good for most people. You can do what is best for yourself, getting the results in strength and good health that you want without wasting time and energy on exercise that is good for nine out of ten people but not good for you. You need not put up with what is second-best. You can get the best.

Of course there are exercises which are good on the

average for a million average people, for everyone is still human, but everyone of these million would be better off if some personal variation were made to suit his own needs. Of course I cannot give you each an individual health examination and a personal prescription, but I can take seven typical people as examples and let them serve to guide you.

EXAMPLES

Men	Women
1. *The Executive;* middle-aged brainworker; professor; manager; artist.	1. *The business woman;* executive; writer, worker, artist, singer.
2. *The clerk,* the young man in a white collar job, salesman, teacher, book-keeper.	2. *The typist,* stenographer, clerk, saleswoman.
3. *The laborer,* the man who does a day's work with his muscles as well as his brains; the machinist.	3. *The housewife,* whose work is never done and who puts in a twenty-four hour day.

ROCK McLEAN, THE CORPORATION MAKER

Take for instance a typical Big City executive, Rock McLean, the famous corporation maker. He was a country boy born on the coast of Maine sixty-four years ago. His constitution is as strong as the spruce from which aeroplane propellers are made and just as the spruce leaves its native soil to drive through many a tempest, so McLean, a boy of 14, left his home in Maine and plunged into the whirlpool of the metropolis.

He never stopped to play. He worked every waking moment. He was a good example of the copybook virtues of fifty years ago, industry, thrift, honesty, and some of our so-called up-to-date qualities—push, progress and power. He climbed into a position of responsibility, he formed a corporation, led another and then linked a dozen more into a huge combination with himself as the master link.

But he never had any time for exercise. It seemed foolish. He was strong. He had a constitution that had been toughened by centuries of clean living and hard, muscular work. He was a biological millionaire. But he spent his vitality as he made his dollars. He earned his millions but he paid for them.

He was quite impressive to look at when he was fully clothed, but when you got down to McLean himself he did not look like a million dollars. He looked like a million others. His rugged frame was hung with soft, aristocratic white meat. His shoulders were thrown back but his abdomen was thrown forward. His chest was large but it hardly moved with his breathing,—a stiff, tight, bony cage. His heart was a trifle large, his arteries a bit stiff, his blood sagged down into his abdomen and left him weak. His only good muscles were those of his jaw and his grip.

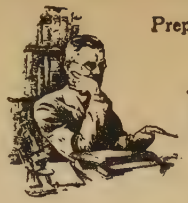
He was in danger. His heart, arteries and kidneys were slowly giving way, disability, disease and death were stealthily creeping upon him.

If this man is you, take heed. You can save yourself

What Is Your Job? Here Are the Right Exercises for You

Prepared by Dr. C. Ward Crampton, National Authority on Exercise

Pick Out the Class of Work Most Like Your Own



	Scholar	Machinist	Postman	Laborer	Office Executive
Typical Deficiencies →	Stoop shoulders; hollow chest; weak muscles; small, weak heart. Thinks play is trivial and gradually "dries up"	Chest bound by excessive muscle work. Large muscles; limited organic power; cramped internal organs	Body slumps from constant wear. Abdomen weak and bulging; muscles, heart, and other organs worn, but sound within limits. Psychologically weary	Muscle bound; slumps from weariness; abdomen weak. Bodily organs tissue bound by work; lose elasticity; too hard in spots; too soft in others. Tired, stolid	Chest stiffened; abdomen bulging; FAT "has-been"; muscles weak; heart small and weak, or large with hard arteries; organs soft. Psychologically too serious and too tense; lacks real fellowship
Corrective Exercises →	**He Needs:** Vigorous setting-up exercises each morning and evening. Daily walk for 45 minutes. Heavy "workout" three times a week. Weekly half-day recreation out of doors necessary	**He Needs:** Daily setting-up exercises necessary for neck and anatomical correction. Twenty-minute walk each morning and night. Boxing and wrestling twice a week. Weekly half-day hike out of doors	**He Needs:** Setting-up exercises each morning and evening vital to correct slump. Walking not needed for exercise. Heavy workout necessary twice a week for short periods. Should stay indoors for weekly half-day	**He Needs:** Abdominal muscles especially require daily setting-up exercises. Daily walk may be omitted if work is in fresh air. "Heavy workout" not needed. Should go out of town and recreate half-day weekly	**He Needs:** Daily setting-up exercises morning and night essential. Daily walk necessary, at moderate pace. Moderate workout of game type twice a week vital. Two half days out of doors at golf or its equivalent

Courtesy of the *Popular Science Monthly*

real misery, you can postpone the evil days and put off for many years the hour of final departure if you take action—prompt action.

McLean took action. He plunged into his get-strong program with the same consummate directness that had always given him victory. And he intended to win again. He did. His program was somewhat like the following which I have sketched out for you.

Of course you should receive a thorough medical and physical examination and follow your physician's advice. Fill out the pages of tests and measurements in this book. You need to start with the simple seven exercises of Chapter IV. Repeat them at night. Do this for two weeks.

Now double the Pumping and Churning exercises, Nos. 2 and 4. Add three round trips of N-E-W-S to the Tickle Toe and do three of the Leg Raising Triad. This is the end of the fourth week. Measure the chest and the abdomen again. You should have gained a half-inch in *expansion* of the chest and an inch in the *contraction* of the abdomen.

In the sixth week, if you don't puff *at all* with the Pep Hops, you can double them, starting with sixteen.

In the eighth week put in the Bicycle twenty times. Next add either Knee Raising (standing) or Kicking six times apiece.

You have now about reached the limit of the physiological work that you should do morning and evening, and you should not exceed it. What you are now doing is

just about the speed that you will wish to keep up. You can vary the exercises if you like, putting in the Scissors instead of the Bicycle, changing the Stretch into the Sky Lift. After you get your neck in good condition you can learn the Half Bridge or perhaps the Bridge.

Measure yourself at the end of each week and do not stop until you get your chest expansion up to three and a half inches and the circumference of the chest at least three inches greater than the circumference of the abdomen.

You need a maximum of massage exercises, Pumping, Churning, the Sigmoid-Appendix Special; Knee Raising and Tickle Toe are your especial pets. Be very guarded in your use of the Pep Hops, Bicycle and Scissors. A little is very necessary—too much is bad. Don't go past the puffing point. If you do, stop, breathe, and change the exercise to a slow Churning. Always wind up with three quiet, satisfactory Star Gazers.

Don't make the mistake that one of the best executives in the big city did. He could run a business but he could not run himself.

He got so much good from the moderate exercise I prescribed for him that he doubled the number of times, overtaxed his strength and slipped back. He then got disgusted with all exercises and like a spoiled child, he stopped everything. He is back again now on a sensible schedule and he has learned not only how to start but how to quit.

THE INSIDE JOB

There are half a million of us in New York City, Boston, Philadelphia and Chicago, to say nothing of Fort Wayne, Louisville, Ogden, Seattle and all points to East and West —the men between the ages of 25 and 35 doing a white collar job eight hours or more a day, every day. As the years go by, we go on up, or stick where we are, or go slowly down and out. This decade after 25 is a period of struggle and fight to get ahead for the earnest young man. Of course there are others who are carefree and take things as they come, instead of making them go.

But weak or strong, married or single, sick or sturdy, we are all using up the years and putting youth behind us. The heritage of power that we possess at birth is diminishing; there is so much left that we do not notice the loss. We will later.

This decade sets the cement, for the years after 45, and determines the kind of physique that a man will have in middle age or later. These are the years that will wear a man down or they can be used to build him up and solidify him in fine, manly vigor. Preserve them—use them!

Of course we know all this; every generation of young men has heard the same advice. Twenty-five hundred years ago old Solomon said: "Remember now thy Creator in the days of thy youth while the evil days come not, nor the years draw nigh when thou shalt say—I have no pleasure in them." Since Solomon's time and before,

the wise young man takes heed and reaps the benefit. Exercise is one of the things he does.

You need the Simple Seven every one of the seven days in the week, no matter how little sleep you get the night before or how you feel about it. It will clear the head and set the body on its feet. Seven minutes' work is worth seventy minutes' sleep. Go through your tests and find out where you stand. Make a careful record, find out your deficiencies, correct them and then make yourself a little better. Make pumping and churning your life-long friends. Develop a mobility of chest and abdomen that means organic soundness. Work with the Leg-Raising Triad, the Bicycle and Scissors until you can do the "L" test a full twenty seconds. Learn all the Pep Hops and dance steps I have given you and then do them with a skipping-rope.

Here is a young man's program. Put yourself into training. Go into a gymnasium, box, wrestle, play handball, learn basketball and keep it up. Two evenings a week is not too much to spend on this kind of thing, especially if you can get it in between 5.30 and 6.30 in some convenient gymnasium. Swim; learn the crawl stroke and trudgeon, the angel, the front and back jacks. All of these belong to young manhood and help to make it and keep it. Get out-of-doors all you can. Remember your Boy Scout days and put your training into actual practice. Have your own camp for Saturdays and Sundays and for your vacation.

Above all, develop your own system of morning exercises. Invent variations of your own.

If you are married at twenty-five, as you should be, see that your wife keeps in good bodily condition also, and when the children come along start them exercising as soon as they can walk.

THE LABORER'S WEAKNESS

"*Exercise?* Don't talk to me about exercise. You do the day's work I do and you will have exercise enough and to spare. What I need is rest and recreation."

Right! Brother, that is natural and true as far as it goes—but Science has some good news for you if you will listen.

Work is different from exercise. Work consists in doing the same things over and over again, until the muscles are tired out and the body is used up. Work does not build up muscles beyond a certain point. It wears down muscles and makes them fibrous gradually driving the life out of them. Parts of the body that are little used become just as weak and as flabby from neglect as the capitalist's body. Some parts of the body you overwork—other parts are hardly used at all. Now make the unused parts of the body refresh the tired parts.

A laboring man came into the hospital clinic, his arms, shoulders and legs hard as rocks—but his chest was hollow and his abdomen bulging. If work was all that was necessary to keep him healthy and make him strong,

he should have been a Hercules—but on the contrary he was used up and sick.

Work is not exercise. Work tears down, exercise builds up. Exercise trains the unused and weakened portions of the body and makes them strong. What the machinist needs most is exercise for the abdominal wall and the chest. His special pets should be the Lying-Down Abdominal Series, Leg Raising Triad; Bicycle; Scissors and Double Scissors; and the Star Gazing series. He does not need to take exercise to give him an appetite or to stimulate the heart and lungs. If he is a very hard worker he doesn't need any stimulation of the internal organs. In fact, he needs rest when he can get it.

Sometimes, however, laborers do little actual, heavy, fast work, and their hearts are capable of just so much and no more. Although they can work all day, they cannot run a hundred yards for a car.

You need the waking-up exercises every morning, Mister Laborer and Brother Machinist. Get up and stretch, then stretch some more; stretch all the way through the seven exercises. If you are so strong, do a little shadow boxing instead of the Pep Hops. If you have a chest expansion of four inches, well enough. Keep it there. If you can do all the abdominal tests including the "L" for thirty seconds, keep it up. If you are full of pep, don't lose it!

Where do you stand on these tests? Perhaps you are a wonder for strength,—perhaps not. Find out!

You need the gymnasium just as much as your white-collared brother for the purpose of having a good time and developing a margin. You can beat him at boxing, running, jumping, handball and basketball, so have a good time, do these things and enjoy them. When Sunday comes get off for a ten-mile hike. If it is winter, put your skates over your shoulder and seek out a river, and skate a dozen miles or so. If there is snow on the river it is on the hills too, club together with some other good fellows, get a bobsled, or learn to slide along on skis. It is a great sport. All the college boys are doing it and there is fun in it: we might just as well have ours, too.

Start every day with a Star Gazer. Go through it with your head up and get your eight hours of rest and sleep—*at night.*

THE WOMAN EXECUTIVE

In the past the work of the world was done by big muscles, stout hearts and keen minds. Machinery takes the place of muscles, for big muscles are out of date. Therefore Woman can take her place in the ranks of the leaders, and she does so with increasing frequency. But the burdens of intellectual achievement are frequently carried on narrow shoulders, supported insecurely by a weak and sensitive bodily mechanism.

Only the physically strong women make good. They have broad chests and their sub-costal angles are over ninety degrees. The weaker women remain in places of

mediocrity. They lack physical drive. The successful woman has a good body either by inheritance, culture, or both. Many, however, start their careers with great promise only to crash in their thirties, and a light which gave hope of guiding the nations, flickers, grows dim and goes out. They are the artists, writers, singers, managers, heads of departments, the school principals, superintendents and directors, who succeed for a while and then slowly or suddenly fail—and the world is robbed of their ripened service which should be increasingly powerful for many a fruitful year. When they break down they receive much sympathy—but that is all. They get little credit and the world goes on.

This is unnecessary.

The successful woman of the fine, progressive type needs to realize that she can have a possession and an ally in her body—for vitality is capital, weakness an expense.

You need, oh! how you need, the whole series of the Seven Exercises morning and night. Your exercise wants are in the main very much like those of the man executive. You should emphasize abdominal massage movements and guard against overdoing the physiological exercises. Reversed breathing and packing are your inspirational exercise. They develop power. Pumping and Churning are life savers. They clean the system and restore vitality. They fight against your arch enemy, constipation and abdominal stagnation. You should re-read and learn by

heart the chapters devoted to the abdominal muscles and practice both the lying-down and standing-up varieties. You should develop a splendid pair of natural corsets and keep them in good repair.

If our women leaders should be superb physical specimens of womanhood, able to run, climb, swim and play vigorous games, their leadership would increase in strength and influence. Think of the woman school principal with twenty teachers and five hundred pupils, or the woman executive dealing with hundreds of persons daily. What will be the effect of a régime backed up with a narrow chest, sallow complexion and lazy colon, compared with the influence of the woman with clean, rosy skin, clear eye, a high head and a perfect digestion, to support her serene, effective personality.

The woman of influence must have as a foundation the best body that she and nature can produce. Your program must include the daily walk of forty-five minutes or more. The fussy, quick steps around the office, shop or studio will not suffice, nor will standing at your work replace it. Quite the reverse. The tense, tired muscles can only be loosened up by long, swinging strides, and plenty of them.

You need play and you must find a game or a sport which will take you out into the open, winter, spring, summer and fall. Let it be tennis, golf, swimming, skating, horseback riding, hiking or canoeing, or better yet use each in turn.

You need to dance, but not social dances alone. You can not afford to miss the stimulation of the dances which bring out the spirit and exercise it as the body itself is exercised. Start with the Pep Steps and develop your own simple dances and rhythms. Search out someone who can carry you further for there are many delightful studios with skilled, artistic teachers to serve you.

You are the New Woman. You are making a New world. See to it that you bring to this new world the strongest and most wholesome equipment of body, mind and soul that a woman can produce.

THE WOMAN WORKER

We are the millions of women who do the every day work of the world.

We type the clouds of daily flying letters which fly to the corners of the earth and carry the business of nations.

We keep account and record of the little steps in the great moving progress of the world.

Under our flying fingers thread is turned to cloth, and cloth to garments which clothe and ornament the bodies of humankind.

We carry the stored-up knowledge and wisdom of the ages to the growing minds of the children. We are the liaison officers between this generation and the next.

We do the huge, ever-growing daily detail tasks which make toward the great perfections of human affairs.

We are the Women who Work.

But if the truth must be told, to our own bodies we seldom give a thought. We eat what we fancy; we drink what we enjoy. We rest hardly ever and we sleep when there is nothing else to do; though we dress and take care of our outside appearance very creditably. Thank you!

But why should we be concerned about our health so long as we have no real pain? Why should we exercise when we have to get up and rush to work and at night, the end of the day, we are tired enough.

. . . . . .

Listen to me and I will tell you "why" for I want you to be happy as much as you can, healthy as long as possible and as successful as you wish to be.

You sit still too much. Your back is weak and sensitive. It aches easily. Your neck is weak and tires as it feels the drag of the day at three o'clock. Your chest is too narrow. The sub-costal angle is too small. Your breathing capacity is insignificant. Your abdominal wall is lax and flabby. Your nerves nag. You are constipated, you have the laxative habit. Headaches are entirely too frequent. Your skin is likely to be unhealthy and there are perhaps other undercurrents of similar illnesses also.

How near the truth is this for you?

How many of these burdens do you needlessly carry?

How long do you intend to let them sap your strength

and dim your happiness, and store up real trouble for you?

Find out what your condition is. Test yourself and get a thorough health examination from a competent health doctor. Work out your exercise schedule and stick to it.

THE SHOP SITTERS

Do you sit still too much?

You should have a Two-Minute Setting-Up Exercise in your office or factory at half past ten in the morning and at half past three in the afternoon. If you do not have this, get a committee together and see the manager. Get a good set of exercises and whip it through. If you are on piece work, watch how much better and faster your work will be afterward. Do not take my word for it. Test it for yourself. If it comes out of the employer's time, test it again and make a demonstration. It has worked with others—it will work with you.

HOW TO CARRY ON A SHOP SET-UP

Select a good leader from among you; one with a good voice and a vivid, buoyant personality. Get him trained in the exercises and then trained to "put them over." Have an alarm clock set for the exact time.

Here is a good set of exercises for the average shop, workroom or office:

When the alarm clock goes off the leader calls out "For Exercise! Get ready!"

The machines stop, the work is laid aside and the whole place is quiet.

Exercise No. 1. Packing

Still sitting in your place, the leader calls:
"Hands on hips—place!"

I. Lift the chest—full breath!
Fuller! Pack it in! More! More! (3 Packs)
Now breathe out slowly.

II. Again, breathe in! Pack! Pack!
More! More! More! (5 Packs)
Hold it while I count four!
(He counts slowly—one! two! three! four!)
Out—slowly—chest up.

III. Breathing! Once more!
Fill up! Fuller! Up! Four packs more!
1—2—3—4! (7 Packs)
Hold it to six counts!
1—2—3—4—5—6!
Breathe out slowly and keep the chest up!

Exercise No. 2. The Stretch

The leader calls:
Stand up! Now for a good stretch!
Hands on shoulder—Place!
Fists tight! Full breath! Fuller!
Stretch the right arm up and the left arm down!

S—T—R—E—T—C—H!!!

This is the regular morning stretch, only it is taken standing up.

Take another good stretch—give the left arm a chance up in the air.

Exercise No. 3. Trunk Bending. N. E. W. S.

Hands on hips—Place!

Trunk bending front and back and right and left!

The leader raises his arm, waves it front, back, right and left; with big, broad swings to get big swinging trunk movements in the group.

This is the N. E. W. S. Exercise and it gets right down to the middle of things.

Do it four times around the four points of the compass.

Exercise No. 4. Trunk Circling

Now let us take a trip around the world.

Make a great circle with the trunk, starting forward, circling right and back, left and front again . Four times.

Circle to the right! Four times!
Circle to the left! Four times!
Make them big!

Exercise No. 5. The Star Gazer

"Now then, get that head up! The chest high and the back straightened out in a position of power."

Clasp the hands behind the head!

Pull the head down on *one!*

Raise it on *two!*

Look at the sky on *three!*
Try to look at the back of your head on *four!*
Turn the head to the right on *five!*
Turn the head to the left on *six!*
Right and left again on *seven* and *eight!*

Repeat four times,

Always keep the eyes on your particular lucky star high in the sky, for you can always see it right through the ceiling, the roof and the clouds themselves—if you look up.

Do the Star Gazer four times and you are through.

. . . . . .

You are stimulated, refreshed and placed in the posture of efficiency and power.

Now back to work and make it fly!

When you sit down settle yourself as far back as you can on the seat. Press your lower back against the back of the chair. When you lean forward if you must, keep that back straight and the chest high. Try not to slump.

If you have strong enough corsets under the skin and a well-exercised back and neck you can do this. If you have not developed these, get them. In the meantime see that the lower abdomen is properly supported. Read over the chapter on this subject and apply it directly to your own case.

SPECIAL INDICATIONS

If you have a tired neck, specialize on the "Hen Peck," "Chin Circling," "Restricted Rotation" and the "Star Gazer." Work on the "Bridge" until you get it.

If you have a little, narrow chest and a sub-costal angle of less than ninety degrees, specialize on breathing, packing, pumping and even reversed breathing until you get a greater power of inspiration with all the benefits that come from it.

Is the abdominal wall weak and slack? Tuck it in and tighten it up. Use the abdominal exercises, first the lying-down Knee Raising and Leg Raising Triad and Scissors. Later take the standing-up Knee Raising, Kicking and Tickle Toe.

Is your complexion sallow? Have you headaches? Are there recurrent periods of unnecessary pain? Start Churning—and add the magic of the East to the science of today.

Are you nervous and irritable? Build yourself a strong, calm trunk as solid as the sturdy and graceful elm and you will feel rooted in the solid earth, with your head serenely raised high to the light of the sun.

All this that I have said relates to indoor exercise at your home and at your work. Remember that you are really an outdoor person and see to it that you get your full share of sunshine, fresh air, walking, hiking and vigorous, active games.

THE TWENTY-FOUR HOUR JOB

THE HOUSEWIFE

You have the biggest and best job in all the world. You make the home.

You are your husband's happiness, his guide, counsellor, friend and support in times of strain and discouragement. You lift the burdens of labor from his shoulders in the evening and bring him rest.

You start him out to the world of work in the morning with courage and strength.

You and only you can bear children, the mysterious compound of you and your mate. You and he live on again in them to people the earth and fulfill its great destiny.

Your labor and responsibility are great, but you have aid. You have the power and all the heritage of the unbroken series of many, many generations of mothers. They guide and counsel you, they color your feelings, direct your thoughts and support your purposes. Through you and only through you pass their gifts,—the gifts of the ages, for the ages to come. You are the earthly deputies of the Almighty for the destinies of mankind are cradled in your arms.

Great successes are made of details,—many of them. Your day is full of them. They begin with your breakfast, continue with the dressing and starting of the house-

hold, and end with the getting of everyone to bed, with the hope that rest may be unbroken.

If your husband is ill, your work and worry are doubled, and your rest dimished. If the children are ill, your care and labor are multiplied.

Truly no one is so dependent upon health for her happiness as are you, yet no one profits so greatly if all the household have Good Health in Great Abundance.

You are the Guardian of the Health of the Home. If you see to it that the morning exercises are done, they will be done, probably not otherwise; so plan the minutes of the morning from the time the alarm clock stops until the husband gets his good-by kiss at the door.

Make the daily exercise a family function, but above all be sure that you get in the exercises that are best for you. If I had planned the Seven Standard Exercises for you alone I could not have fitted your needs more exactly. You need the stretching, the deep breathing, the abdominal massage and strong abdominal muscles. Most of all you need abdominal exercises. Constipation is your foe, laxatives your false friends, Pumping and Churning your faithful aides. Knee Raising, Leg Raising, the Appendix Sigmoid Special are of greatest value. The Camel is the best type of Churning for you for it puts the uterus in its old biological position, hanging downward from its attachment, instead of pushed down in the pelvis and crowded upon by all other abdominal organs, as in

the upright posture. The position on the hands and knees in which the Camel is taken relieves it from all pressures and congestion. This exercise alone has been of greatest benefit to many cases of dysmenorrhœa and has removed from many lives hours of distress and disability.

BACKACHE

Backache comes in various evil forms—between the shoulders and at the base of the neck it is usually the result of long continued strains of body and nerves. The Star Gazer, Hen Pecking and Tickle Toe will do much to relieve it.

Backache across the lower part of the back is most frequently due to abdominal, especially uterine congestion for which the Camel has most beneficent effects.

The housewife of all the people in the world should know how to organize her labor and know how to rest. Certain tasks are done over and over again, every day of the year and it would seem as if mere repetition would lead to development of labor-saving economies in time and trouble. There are ways of washing dishes, and making beds which are simple and effective. These details take up a great deal of time and energy. They should be studied. A good home magazine will always have many helpful hints.

One counsel I can give you that will help every moment of the day. Make the back strong and keep it straight

whether you are sitting, standing or working. Take your exercises until they have made you one solid, unit of flesh, bone and vitality that doesn't crumple up. If you feel that you must crumple up, crumple down instead. Lie down flat for sixty seconds, right on the floor, or on a hard couch without a pillow. Take two or three long breaths and five or six "pumps," then you can relax and close your eyes for sixty seconds more. This is the Two-Minute Drill for the housewife which should be taken just as often as she needs it.

The best times to take the Two-Minute Drill are after everybody has gone to work or to school, before you turn to the housework. The next time is when you have finished the housework and you are about to tidy yourself up to go to market. Two minutes here will make marketing a far more successful and happy time. The next time you rest it should be longer than two minutes. It comes after lunch when the little ones get their rest time. Mother should get her rest hour too. If you cannot relax try deep breathing and pumping until you do. Another moment of rest when you have dinner on, the table set and you are waiting for the man of the house to turn the key in the lock. Lie down, relax and give your soul and spirit a chance to well up and it will come out in a smile and a kiss that will give happiness to both of those who are most concerned. This is the way to start the evening, the best part of the day.

To finish up the day before going to bed with a few

vigorous trunk exercises, take the final kinks out of the neck with the Star Gazer and you will go to the land of dreams.

Don't tell me that you have no time to do these things. You have no time to omit them for if you do you will be forced to give up a great deal more time for real illness, discomfort and disability. Moreover a woman's great privilege (if it is not a duty) is to be beautiful. You were beautiful in the eyes of your husband in the days of courtship. You can be beautiful for all the days of your life if your body is strong, if you keep it trim and do not slump, and you will have the charm of wholesomeness, which can fade only with illness or neglect.

CHILDHOOD

You can see the fingerprints of the years in the bodies of grown-up men and women. Here on the chest wall are the signs of a period of malnutrition. There in the set of the shoulders the story of long-ago attacks of childhood asthma. The sounds of the heart and lungs tell of the damages and partial repairs that the body has met in successful warfare against illness.

Round shoulders, hollow chests and bulging abdomens, tell the tales of neglect by parents and by schools. A straight back, high head, large chest and taut abdomen give permanent testimony to the wisdom and energy of wise parents and good schools.

Within certain limits you can make your children's

bodies what you want them to be. You can do this best while the human frame is soft and pliable. Get in your good work while it is hardening. Play the part of sculptor and help God make a man.

Make the morning exercise a family affair. Take the evening period and the getting of the children to bed, often a troublesome task, and make it an occasion for a jolly good time. The children are ready for a romp, but too often it becomes hectic and excited, and the difficulty in getting little ones out of bed the next day may be due to the nervous tensions of the previous evening. Make your evening exercise absorb the restless nervousness which makes children lie awake and disturb the evening of the family.

"Mother, can I have a drink of water?"

"John, if I have to come up to you, you will wish I had not!"—etc., etc., with a hundred variations. Slow Pumping will quiet the nerves and the circulation, especially if it is taken after vigorous Bicycling and Scissors or Double Scissors. Children will learn the exercises more rapidly than you will. They like to try stunts. They like especially to stand on their heads which they can do easily, and nothing is better for their future good posture. The women who are most famous for their good posture are those who habitually carry huge burdens on their heads. Standing on the head produces the same result for the weight of the body is carried by the head and hands.

One can make a whole system of physical training out of this exercise alone.

If you have read and studied this book intelligently you have gone a long way toward learning how to train your children. You should know exactly what results you may get from each exercise and how to get them. If you stick to your text you cannot go astray, though there is much more that can be given for every one. You cannot take time to become an expert physical trainer nor can you get it all out of a book. You need your physician and physical training expert for the rest, but if you will you can do things for the children that will make you very happy and proud in the years to come.

Don't try to exercise the children before they are three years old. Start then to teach the exercises one by one in the form of play. They like to imitate the Pussycat and the Dog Wag and they make splendid Camels. Guard against too rapid and vigorous exercises for little ones will overdo quickly; almost as quickly as they recover from the effects of it.

When the school years come, visit the school. Study carefully what is being done in the way of health instruction as well as health safeguards. Join your local Parent-Teacher Association and become a member of its committee on hygiene or physical training. I have been permitted to use the following schedule of points which I prepared for the National Congress of Mothers and Parent-Teacher Associations of the United States.

SCHOOL SCORE CARD FOR PHYSICAL TRAINING

SCORE CARD

FOR RATING THE HEALTH BUILDING AND LIFE PRESERVING WORK OF THE SCHOOL

School (Public-Private).....City.....Date.....

Reported by.....

	SCORE		
	1st	2nd	Final
1. **TIME** Does every child get 30 minutes active exercise every day in school time, under expert school instruction?.....	.....	.....	.....
2. **DRILL** Is Two-Minute Drill given three times daily?.....	.....	.....	.....
3. **PLAY SPACE** Is there available on school premises 30 square feet of play space for every child in attendance?.....	.....	.....	.....
4. **GAMES** Do all children know one game for each year of age?.....	.....	.....	.....
5. **FOLK DANCES** Does every girl know one folk dance for each year of age?.....	.....	.....	.....
6. **SINGING GAMES** Does every primary child know four singing games?.....	.....	.....	.....
7. **GAMES—ATHLETICS** Does every grammar school boy know baseball, basket-ball, soccer football, and has he a game twice a week?.....	.....	.....	.....
8. **OUTSIDE ACTIVITIES** Does every child over 12 years of age participate in Boy Scout, Campfire, or Girl Scouts or equivalent activity?.....	.....	.....	.....
9. **POSTURE** Is every child marked every month on Posture?.....	.....	.....	.....
10. **HEALTH INSPECTION** Is there Health inspection by every teacher, of every pupil, every day?.....	.....	.....	.....
11. **HEALTH CLUB** Have you a Health Club, or League, or Crusaders?.....	.....	.....	.....
12. **PHYSICAL EXAMINATION** Is there physical examination by doctor once a year?..	.....	.....	.....
13. **HYGIENIC INSTRUCTION** Is hygiene taught happily and effectively 30 minutes a week?.....	.....	.....	.....
14. **SANITATION** Is the school clean, well heated, lighted and ventilated?.....	.....	.....	.....
Total.....	.....	.....	.....

ACTION RECOMMENDED.....

COMMITTEE APPOINTED.....Chairman.....1.....2.....

COMMITTEE REPORTED.....

100% OBTAINED.....

COMMITTEE DISCHARGED....Date....Date for further inspection....

Not done. No desire to do...	Zero	Done fairly well	50
Not done. Promise	25	Done, good work	75
Done, but irregularly	33	Done "as unto the Lord"	100

From the Child Welfare Magazine, Vol. XVII, No. 7, March, 1923.

This score card is to be used by the local Parent-Teacher Association in its study of ways to help the school and the children therein. You can get copies of this for the use of your own Association either by writing to G. P. Putnam's Sons, N. Y. C., the publishers of this book or to the Editor of the Child Welfare Magazine, Philadelphia, Pennsylvania.

Visit the classroom, gymnasium and playground and see your child go through his exercises. A good physical training period should conform to the standards which I introduced into the New York City School System many years ago and which are used largely throughout the United States.

SCHOOL EXERCISES

Introductory Exercises

come first. They are like our stretching but occupy only a brief moment or two.

Corrective Exercises

for good posture come next. They are devoted to lifting the head, straightening of the neck as in the Star Gazer and improving the abdominal tone.

Educational Exercises

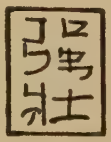
with brisk, definite, quick commands, calculated to stimulate accurate and prompt response follow. These are for the purpose of mental rather than physical training. They remove motor stupidity. They replace it with grace, agility and accurate, well-directed movements.

Recreative Exercises

of games, folk dances and group athletics finish up the period. These should be emphasized and put in the lives of every child.

After school hours up to supper time should be spent as much as possible in the fresh air. Every boy should become a member of the Boy Scouts and every girl a Camp Fire Girl or Girl Scout, at the age of twelve. Every boy or girl should spend several summers at a well-directed summer camp but you will have to be very careful in your selection for many a parent has found that a beautiful prospectus with charming photographs has been published at the expense of providing the children with good food, shelter and responsible leadership. Visit the camp before the season opens and talk personally with at least three parents who have sent children to the camp and who have personally visited it.

Remember that exercise is not your only duty to the health of your child. You owe it to his future to put him under the care of a health doctor. He will aid you to avoid disease, root out protein sensitizations if they exist and save many hours of pain and misery, beside making a better boy into a better man.



CHAPTER XIV

BATHING

CONTENTS

THE WAKE-UP BATH
RUBBING
THE TEST OF THE BATH

CHAPTER XIV

BATHING

Just a brief word on bathing.

There are many different kinds of baths as there are different kinds of exercise. Some stimulate, some relax, others are for cleansing, while others have their special uses in illness.

The standard morning bath for ordinary persons is as follows:

THE WAKE-UP BATH

This bath is for tonic purposes and only incidentally for cleansing. At least twice a week at night there should be a good soap and water scrub all over the body with warm water and good, white, bath soap. Of course if you have your twice-a-week regular work-out in gymnasium or on the tennis court, with perspiration, you will get an additional soaping, shower and rub.

The standard morning bath consists of warm water

all over the body for two minutes, with soap under the arm pits and in the other creases of the body; next take a full half minute of cool water and stop here unless you are in good vigorous condition with plenty of fat on the bones. If you are in fine shape, take the half minute of cold water but not otherwise.

If you have no shower bath, buy a rubber spray tube which fits on any faucet, so that you can spray all parts of the body.

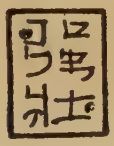
If you are just starting in your body cultivation, fill the bath tub half full of warm water and then go through your spraying which will leave you at the end standing up with your feet in warm water while you dry the rest of the body.

These instructions, simple as they may seem, are based upon a long study of hydrotherapy for invalids and for well people.

When you have finished with the bath you have only commenced its most important part, which is the rubbing. Müller, the great popular physical culturist of Europe, has done a tremendous work in the world with his constant and widespread propaganda for the rubbing bath. After his exercises and even during them, he rubs every square inch of skin on the body from six to seven times, or more. This stimulates the skin, tones and strengthens the nervous system, and puts a tingle in all of the tissues.

There is much more that every man and woman ought to learn about bathing; but it cannot be told here;

it should have a volume devoted entirely to it. You have the essentials in these few words and you can add to it the results of your own experience. The test of whether a bath has been too severe for you or not comes at ten o'clock in the morning. If you feel languid and disinclined to work, it may be due to a too cold or too prolonged shower before breakfast, or it may be due to the fact that you are in poor condition otherwise.



CHAPTER XV

SELF-TESTING

CONTENTS

WHERE DO I STAND?
SAMPLE RECORD OF A HEALTH CLIMBER
BLANKS FOR SELF RECORD
RECORD OF A 100% MAN

CHAPTER XV

SELF-TESTING

Where do I stand?
Do I need these exercises?
Will they really do me good?
How can I check up my improvement?

These are good questions. Suppose you answer them yourself. Throughout this book several tests have been recommended. By the use of these you can see for yourself how you are getting on. You are entitled to know just how much benefit comes from your effort and work. If you do not get your results you should change your method and find out what is wrong. If you are faithful you will be rewarded with physical improvements which are a thousand times worth while.

Here is a sample of the record of improvement made by a business man who was "in fair shape" and wished to

get into 100% condition. He was a hard-working business man, successful financially and socially, and he was wise enough to see that his body was deteriorating and he wanted to live long and enjoy life. He went to a wise physician who searched him over for signs of disease, past, present and future. He received guidance on diet, habits, work, rest and exercise. He followed his instructions faithfully, got his results quickly, took his own measurements and kept his own records.

You can do the same. This is quite worth while because many men start some system of exercise, it does them good for a time, they feel better, become independent and lazy, and then they slip again.

THE RECORD OF THE HEALTH IMPROVEMENT OF WILL B. STRONG

Age 38, Married, 4 Children, Commission Merchant

	1st Record Oct. 1	*2nd Record Nov. 1 (1 mo. later)*	*3rd Record Jan. 2nd (3 mos. later)*	*Ideal Record of a 100% Man of good all-around physique*
Chest contracted	35 inches	35 inches	36 inches	37 inches
Chest full	36 "	38 "	40½ "	42 "
Expansion	1 inch	3 inches	4½ inches	5 inches
Abdomen	40 inches	38 inches	37 inches	36 inches
Chest, Abd., Ratio	$\frac{36}{40}$ = .90	$\frac{38}{38}$ = 1.00	$\frac{40\frac{1}{2}}{37}$ = 1.09	$\frac{42}{37}$ = 1.16⅔

(He developed a splendid flexible chest and pulled in a flabby abdomen. His expansion of 4½ inches is as much as anyone needs. At this age, a chest-abdomen ratio of 1.09 is as good as we can reasonably expect. It is usually around 70 to 90.

According to the latest insurance records, his decrease in girth of abdomen and increase in girth of chest improved his chances of life 25%!)

THE RECORD OF THE HEALTH IMPROVEMENT OF

	1st Record	*2nd Record* (*1 mo. later*)	*3rd Record* (*3 mos. later*)	*4th Record* (*1 year late*)
Chest contracted	inches	inches	inches	inches
Chest full	inches	inches	inches	inches
Expansion	inches	inches	inches	inches
Abdomen	inches	inches	inches	inches
Chest, Abd., Ratio	%	%	%	%
Other records and measurements desired by physician or teacher of physical culture				

To be filled in by the owner of this book.

TEST EXERCISES

Record of Will B. Strong

	1st Record Oct. 1	*2nd Record Nov. 1 (1 mo. later)*	*3rd Record Jan. 2 (3 mos. later)*	*Ideal Record of a 100% Man of good all-around physique*
Toe Touching				
Standing	O. K.	O. K.	O. K.	O. K.
Sit-Up	Not by 6"	O. K.	O. K.	O. K.
Touch Back	Not by 2½ feet	Nearly	O. K.	O. K.
The "L"	Impossible	Looks Likely	Hold it 3 secs.	30 seconds
One-Half Bridge	O. K.	O. K.	O. K.	O. K.
Three-Quarter Bridge	Not tried	O. K.	O. K.	O. K.
Bridge	Not tried	O. K.	O. K.	O. K.
Turning Bridge	Not tried	Not tried	Can do using arms	O. K.
Knee Stand	No	O. K.	3 minutes easy	5 minutes easy
Head Stand	Not tried	O. K.	O. K.	3 minutes
Knee-Elbow Stunt	Not tried	Failed	O. K. Easy	O. K.

TEST EXERCISES
(My Record)

Date.	*1st Record*	*2nd Record (1 mo. later)*	*3rd Record (3 mos. later)*	*4th Record (1 year later)*
Toe Touching Standing Sit-Up				
Touch Back				
The "L"				
One-Half Bridge				
Three-Quarter Bridge				
Bridge				
Turning Bridge				
Knee Stand				
Head Stand				
Knee-Elbow Stunt				

SPECIAL TESTS

Record of Will B. Strong

	1st Record Oct. 1st	*2nd Record Nov. 1*	*3rd Record January 2nd*		*Ideal Record of a 100% man in good all-around physical condition*
Pulse Rate Standing	90	86	86		72
After Running in Place 30 seconds; rate of 180 steps per minute; by 5 second intervals	Easy Test 30 sec. Run	Easy Test 30 sec. Run	Easy Test 30 sec. Run	Hard Test 60 sec. Run	Hard Test 60 sec. Run
	Pulse Rate	Pulse Rate	Pulse Rate	Pulse Rate	Pulse Rate
Rate after 5 secs.	156 per min.	132	120	132	96
" " 10 "	144	132	108	120	84
" " 15 "	132	120	108	108	84
" " 20 "	120	120	96	108	84
" " 25 "	132	108	96	96	72
" " 30 "	120	108	96	96	72
" " 35 "	108	96	108	108	72
" " 40 "	120	108	84	96	72
" " 45 "	108	96	84	96	72
" " 50 "	108	96	84	96	72
" " 55 "	108	96	84	96	72
" " 60 "	108	96	84	96	72
Back to Standing Normal in	2 min. and 35 sec.	1 min. and 30 sec.	45 sec.	1 min. 30 sec.	Normal in 30 sec.
It should be 1 minute for 100%					
Deduct 1% for each second over 60					
Ratio on *easy* test is	5%	70%	115%	....	.....
Ratio on *hard* test	..	..	.....	70%	130%
Blood Ptosis Test	40	75	80	....	95
Hæmoglobin	80	85	90	....	96

SPECIAL TESTS
(My Record)

	1st Record	*2nd Record (1 mo. later)*	*3rd Record (3 mos. later)*	*4th Record (1 year later)*
Pulse Rate Standing				
After Running in Place 30 seconds; rate of 180 steps per minute; by 5 second intervals	Easy Test 30 sec. Run	Easy Test 30 sec. Run	Easy Test 30 sec. Run / Hard Test 60 sec. Run	Hard Test 60 sec. Run
Rate after 5 secs.	Pulse Rate per min.	Pulse Rate	Pulse Rate / Pulse Rate	Pulse Rate
" " 10 "				
" " 15 "				
" " 20 "				
" " 25 "				
" " 30 "				
" " 35 "				
" " 40 "				
" " 45 "				
" " 50 "				
" " 55 "				
" " 60 "				
Back to Standing Normal in	min. sec. / min. sec.	min. sec. / min. sec.	sec.	
It should be 1 minute for 100%				
Deduct 1% for each second over 60				
Ratio on *easy* test is	....	....	....	....
Ratio on *hard* test	....	....	....	....
Blood Ptosis Test	....	....	....	....
Hæmoglobin	....	....	....	....

CHAPTER XVI

WEIGHT AND OVERWEIGHT

CONTENTS

THE DAY OF THE FAT MAN
THE BEST WEIGHT
AFTER THIRTY YEARS
THE NEW POINT OF VIEW
IF YOU ARE TOO FAT
TABLES OF STANDARD WEIGHTS
TABLES OF PENALTIES FOR OVERWEIGHT

CHAPTER XVI

WEIGHT AND OVERWEIGHT

In the past it was generally thought that a man naturally increased in weight as he grew older. It was expected and thought to be quite the correct thing. But today is not the day of the fat man—or the fat woman either. The day of the fat man is yesterday. Overweight has been found to be at a discount after the age of thirty. Let me quote from Dr. Louis I. Dublin, the noted health statistical expert,[1] who has the records of eleven million people, old and young, at his fingers' ends:

"Let us consider the question of optimum weight, that is, that weight in relation to height and age with which the greatest length of life is associated.

"A distinction must first be made between the optimum weight and the average weight. In the past, the average has often been assumed to be the best weight and tables

[1] Statistical Bulletin, Metropolitan Life Insurance Company—(Vol. 4, page 3, March 23, 1923.)

of averages have been very widely circulated and used as guides by physicians, nutrition and clinic workers and others concerned with the health of children and adults. In this way, there sprang up the general assumption that deviation from the average weight was undesirable and indicated trouble. Children who were as little as 10 per cent below the average have been considered malnourished and adults who were 20 per cent or more above or below the average have been looked upon as impaired more or less seriously. We now know that such assumptions about the normality of the average weight are erroneous. In fact, it can be shown that the most favorable mortality experience is often found among risks whose weights are considerably below or above the averages for their height and age.

"At ages under 30 years, the lowest mortality rates among insured persons are found in risks whose weights are above average. An excess of about 10 pounds in weight above the average produces the most favorable mortality rates between the ages of 20 and 24 years. This excess tapers off until about age 30, where the most favorable mortality is found among persons of approximately average weight. After age 30, the more favorable mortality rates are found among persons whose weights are below average. The amount below average increases with advancing age and at age 50, individuals appear to be at their best when their weight is as much as 30 to 40 pounds below the average.

"It seems clear, therefore, that for persons beyond 30, underweight is distinctly an advantage so far as a favorable prospect of mortality is concerned. It is erroneous to suppose that weight should increase with age, as we have been led to believe by the tables for average weights. This increase with advancing age is, of course, a very common occurrence, but there is every indication that it is a disadvantage and should be carefully avoided. The public health movement in its attack upon the diseases of adult and later life will do well to bear this fact in mind.

"The body-weight of persons in adult and later life gives a fair indication of the amount of work which is thrown upon the digestive, circulatory and excretory systems. As men grow older, the difficulties of normal functioning of these systems increase with the accumulation of impairments. At the same time, persons as they advance in age seem to grow more inclined to take in more food, especially proteins and fats, and less inclined to indulge in wholesome exercise. This has a tendency to place more and more of a strain upon the food utilization machinery and consequently, to hasten the breakdown of the organs concerned in these processes. A realization of these facts on the part of the public would lead, no doubt, to marked changes in habits of diet and exercise and to an amelioration of conditions which today lead to so much mortality from diseases of the heart, blood vessels and kidneys. There is abundant clinical evidence to prove that through the restriction of diet

and the encouragement of exercise in adults the conditions premonitory of organic impairment and eventual breakdown of the circulatory and excretory systems have been averted. These facts from life insurance records only tend to reinforce what hygienists have been advocating for years."

. . . . . .

In other words, "A lean horse for a long race." In brief, excess weight is a handicap against the life of the fat man. Especially after 30.

While the slim man has a better chance of long life than the man of average weight on the whole, yet he need not congratulate himself and go ahead blindly. Thinness will not save him if he is suffering from organic disease, rheumatism, tuberculosis, nephritis, etc. Nor does mere fatness serve a death warrant; it only means that the body processes are running slow and that there is left upon the body and throughout its tissues a quantity of low-grade body substance which should be cleaned up by activity. It is not the accumulation of fat that kills. It is the slackness of vital processes which permit the accumulation of weight. Fatness is the result,—a sign of deficiencies which are deeper than the surface, in the internal organs or the endocrine glands.

Going to a gymnasium to take off weight, without first going to your doctor and correcting the cause of the fat, is like fighting an octopus by cutting off its tentacles and not

attacking the vital center of the beast. The tentacles of the octopus will grow again—so will the fat. When you remove the cause you can reduce in safety and the fat will very likely fade of itself.

Inactivity is the reason underlying most of the causes of fat. It makes the body stagnant, reduces vitality and fat follows.

Don't try to "burn up" fat by exercise. You are on the wrong track. According to Dr. Eugene Lyman Fiske of the Life Extension Institute, one of America's authorities on health: "Eight hours of steady walking will only burn up ¼ of a pound of fat"—but eight hours of walking distributed through eight days will tone up the system and help to make the man more alive, his vital organs more vigorous and his health better.

If you are too fat proceed as follows:

1. Don't worry, *but* take action.
2. See a good health doctor and follow his instructions.
3. Do your daily exercises for the vital organs giving the foregoing chapters of this book careful study.
4. Round out your daily program with full attention to the instructions in Chapter XII.
5. Tidy up your habits; stop all drinking of alcoholic liquors; stop candy; cut down on bread and sweets as well as starchy foods.
6. Bring your chest-abdomen ratio above 100 and keep it there—110 is better. The chest must be bigger than the abdomen.
7. Keep at it.

Standard Table of Heights and Weights-Men

BLACK-FACE FIGURES ARE THE AVERAGES
LIGHT-FACE FIGURES ARE 20 PER CENT UNDER AND OVER THE AVERAGE

HEIGHTS		WEIGHTS ACCORDING TO AGE PERIOD								
Ft.	*In.*	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
		89	94	98	100	102	104	106	106	107
4	11	111	117	122	125	127	130	132	133	134
		133	140	146	150	152	156	158	160	161
		90	95	99	102	103	106	107	108	109
5	0	113	119	124	127	129	132	134	135	136
		136	143	149	152	155	158	161	162	163
		92	97	101	103	105	107	109	110	110
	1	115	121	126	129	131	134	136	137	138
		138	145	151	155	157	161	163	164	166
		94	99	102	105	106	109	110	111	112
	2	118	124	128	131	133	136	138	139	140
		142	149	154	157	160	163	166	167	168
		97	102	105	107	109	111	113	114	114
	3	121	127	131	134	136	139	141	142	143
		145	152	157	161	163	167	169	170	172
		99	105	107	110	112	114	115	116	117
	4	124	131	134	137	140	142	144	145	146
		149	157	161	164	168	170	173	174	175
		102	108	110	113	115	117	118	119	120
	5	128	135	138	141	144	146	148	149	150
		154	162	166	169	173	175	178	179	180
		106	111	114	116	118	120	122	122	123
	6	132	139	142	145	148	150	152	153	154
		158	167	170	174	178	180	182	184	185
		109	114	117	119	122	123	125	126	126
	7	136	142	146	149	152	154	156	157	158
		163	170	175	179	182	185	187	188	190
		112	117	120	123	126	127	129	130	130
	8	140	146	150	154	157	159	161	162	163
		168	175	180	185	188	191	193	194	196
		115	120	123	126	130	131	133	134	134
	9	144	150	154	158	162	164	166	167	168
		173	180	185	190	194	197	199	200	202
		118	123	126	130	134	135	137	138	138
	10	148	154	158	163	167	169	171	172	173
		178	185	190	196	200	203	205	206	208
		122	126	130	134	138	140	142	142	143
	11	153	158	163	168	172	175	177	178	179
		184	190	196	202	206	210	212	214	215
		126	130	135	139	142	145	146	147	148
6	0	158	163	169	174	178	181	183	184	185
		190	196	203	209	214	217	220	221	222
		130	134	140	144	147	150	152	153	154
	1	163	168	175	180	184	187	190	191	192
		196	202	210	216	221	224	228	229	230
		134	138	145	149	153	155	158	158	159
	2	168	173	181	186	191	194	197	198	199
		202	208	217	223	229	233	236	238	239
		138	142	150	154	158	161	163	164	165
	3	173	178	187	192	197	201	204	205	206
		208	214	224	230	236	241	245	246	247

NOTE.—The average weight is seldom the best. It is usually too high.

Standard Table of Heights and Weights-Women

BLACK-FACE FIGURES ARE THE AVERAGES

LIGHT-FACE FIGURES ARE 20 PER CENT UNDER AND OVER THE AVERAGE

HEIGHTS		WEIGHTS ACCORDING TO AGE PERIOD								
Ft.	*In.*	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59
		88	90	93	95	98	101	103	105	106
4	11	**110**	**113**	**116**	**119**	**122**	**126**	**129**	**131**	**132**
		132	136	139	143	146	151	155	157	158
		90	92	94	97	99	102	105	106	107
5	0	**112**	**115**	**118**	**121**	**124**	**128**	**131**	**133**	**134**
		134	138	142	145	149	154	157	160	161
		91	94	96	98	101	104	106	108	110
	1	**114**	**117**	**120**	**123**	**126**	**130**	**133**	**135**	**137**
		137	140	144	148	151	156	160	162	164
		94	96	98	100	103	106	109	110	112
	2	**117**	**120**	**122**	**125**	**129**	**133**	**136**	**138**	**140**
		140	144	146	150	155	160	163	166	168
		96	98	100	102	106	109	111	113	114
	3	**120**	**123**	**125**	**128**	**132**	**136**	**139**	**141**	**143**
		144	148	150	154	158	163	167	169	172
		98	101	103	106	109	111	114	115	117
	4	**123**	**126**	**129**	**132**	**136**	**139**	**142**	**144**	**146**
		148	151	155	158	163	167	170	173	175
		101	103	106	109	112	114	117	118	120
	5	**126**	**129**	**132**	**136**	**140**	**143**	**146**	**148**	**150**
		151	155	158	163	168	172	175	178	180
		104	106	109	112	115	118	121	122	122
	6	**130**	**133**	**136**	**140**	**144**	**147**	**151**	**152**	**153**
		156	160	163	168	173	176	181	182	184
		107	110	112	115	118	121	124	126	126
	7	**134**	**137**	**140**	**144**	**148**	**151**	**155**	**157**	**158**
		161	164	168	173	178	181	186	188	190
		110	113	115	118	122	124	127	130	130
	8	**138**	**141**	**144**	**148**	**152**	**155**	**159**	**162**	**163**
		166	169	173	178	182	186	191	194	196
		113	116	118	122	125	127	130	133	134
	9	**141**	**145**	**148**	**152**	**156**	**159**	**163**	**166**	**167**
		169	174	178	182	187	191	196	199	200
		116	119	122	124	127	130	133	136	138
	10	**145**	**149**	**152**	**155**	**159**	**162**	**166**	**170**	**173**
		174	179	182	186	191	194	199	204	208
		120	122	124	126	130	133	136	139	142
	11	**150**	**153**	**155**	**158**	**162**	**166**	**170**	**174**	**177**
		180	184	186	190	194	199	204	209	212
		124	126	127	130	132	135	138	142	146
6	0	**155**	**157**	**159**	**162**	**165**	**169**	**173**	**177**	**182**
		186	188	191	194	198	203	208	212	218

NOTE.—The average weight is seldom the best. It is usually too high.

In interpreting the standard tables of weights and heights, bear in mind that the average weight is not the best weight any more than the income of the average man is considered the ideal income.

How much decrease in expectation of life accompanies overweight?

If I weigh 190 pounds and I am 37 years of age, five feet eight inches tall, what are my chances of long life compared with the average man? Here Dr. Dublin has again answered your question in the following tables.

Find your weight, height and age and then refer to the column at the left of the table headed "Mortality Ratios." In your case you will find that the number is 125; this means that your chances of death are 25% greater than that of the average man of your age and height. If you weighed 169, the average weight for your height and age, your expectancy would be the average—and what is far more important, if you were under this weight, your chances would be correspondingly better than the average chances.

Worth considering isn't it?

DIRECTIONS

Use for males and for females.
Drop fractions of an inch, ½-inch or less; over ½-inch, use next inch.
Overweights whose abdominal girth exceeds the expanded chest girth should receive additions to mortality ratios as per table on page 263.

LIMITS OF OVERWEIGHT CORRESPONDING TO VARIOUS MORTALITY RATIOS.

HEIGHTS	Mortality Ratios	WEIGHTS ACCORDING TO AGE PERIOD								
		20–24	25–29	30–34	35–39	40–44	45–49	50–53	54–56	57–59
5 ft., 1 in.	100	144	137	131	129	128	130	131	130	129
	110	160	149	138	138	140	140	142	142	142
	120	166	159	147	149	150	151	151	152	152
	125	167	160	154	152	152	154	156	157	157
	135	173	166	161	159	159	161	162	163	163
	140	177	170	165	162	163	163	166	166	168
	150	182	175	167	168	169	170	171	174	174
	160	187	183	178	175	175	176	177	181	181
5 ft., 2 in.	100	149	141	135	134	133	135	135	135	134
	110	163	152	144	143	145	145	147	147	147
	120	169	162	151	153	155	155	155	156	156
	125	171	163	158	157	156	158	160	161	161
	135	177	170	165	163	163	165	167	167	167
	140	180	173	168	166	166	168	170	171	172
	150	187	179	172	172	173	175	176	178	178
	160	192	187	181	179	178	180	181	185	185
5 ft., 3 in.	100	153	146	141	140	139	141	141	141	140
	110	166	157	150	149	150	151	153	153	153
	120	173	166	157	158	160	160	161	162	162
	125	175	168	163	160	161	163	165	165	166
	135	181	175	170	168	168	170	172	173	174
	140	185	178	173	171	171	173	175	176	177
	150	191	183	177	177	178	180	181	183	183
	160	197	191	186	184	183	186	187	190	191
5 ft., 4 in.	100	158	151	147	147	146	147	147	147	146
	110	169	161	156	156	155	157	158	159	159
	120	177	170	163	164	165	165	167	168	168
	125	180	173	168	167	167	169	171	171	172
	135	186	180	175	174	173	176	178	179	180
	140	190	183	178	177	176	179	181	182	183
	150	196	188	183	183	183	185	187	189	189
	160	202	196	191	190	188	191	193	196	197
5 ft., 5 in.	100	163	156	153	153	152	154	154	154	152
	110	173	166	162	162	162	163	164	165	165
	120	182	174	170	170	171	171	173	174	174
	125	185	178	174	173	173	175	177	178	178
	135	191	185	181	180	179	182	184	185	186
	140	195	188	184	183	182	185	187	188	189
	150	201	194	190	190	190	191	194	196	196
	160	207	201	197	196	194	197	200	202	204
5 ft., 6 in.	100	166	160	159	159	159	160	161	161	161
	110	177	170	168	168	168	170	171	172	173
	120	186	179	176	176	176	178	180	181	182
	125	189	183	180	179	179	181	183	185	185
	135	196	190	187	186	185	188	190	192	193
	140	200	193	190	189	188	191	193	195	196
	150	206	200	197	196	196	197	200	202	203
	160	212	206	203	202	200	203	206	209	210
5 ft., 7 in.	100	168	164	164	164	165	166	167	168	168
	110	179	175	173	173	174	176	177	178	179
	120	189	183	181	181	182	184	186	187	188
	125	192	188	186	185	185	187	189	191	192
	135	199	195	193	192	191	194	196	198	199
	140	203	198	196	195	194	197	199	201	202
	150	209	205	203	201	201	203	206	208	209
	160	215	211	208	207	206	209	212	215	216

Based on Medico-Actuarial Reports, 1912–1918.

LIMITS OF OVERWEIGHT CORRESPONDING TO VARIOUS MORTALITY RATIOS*

HEIGHTS	Mortality Ratios	WEIGHTS ACCORDING TO AGE PERIOD								
		20–24	25–29	30–34	35–39	40–44	45–49	50–53	54–56	57–59
5 ft., 8 in.	100	170	167	168	169	170	172	173	175	175
	110	181	178	178	179	179	182	183	184	185
	120	191	187	186	187	188	190	192	193	194
	125	195	192	191	190	191	193	196	197	198
	135	203	199	198	198	198	200	203	204	205
	140	207	202	201	201	201	203	206	207	208
	150	212	209	208	207	207	209	212	214	215
	160	218	215	213	213	212	215	218	221	223
5 ft., 9 in.	100	173	171	171	173	174	176	177	179	180
	110	182	180	181	184	184	186	188	189	191
	120	192	189	189	192	192	194	196	197	199
	125	196	194	193	194	195	198	200	202	203
	135	205	202	202	202	203	205	208	209	210
	140	209	206	205	205	206	208	211	212	214
	150	214	212	211	211	211	215	217	219	221
	160	221	218	217	217	217	220	223	226	228
5 ft., 10 in.	100	176	175	175	176	177	180	181	183	184
	110	181	181	184	187	188	190	192	193	195
	120	192	191	192	195	196	197	199	201	203
	125	197	195	196	198	199	202	204	206	208
	135	206	204	204	206	207	209	213	214	215
	140	210	208	208	209	210	212	216	217	219
	150	216	215	214	214	215	219	222	224	226
	160	223	221	221	221	221	225	228	231	233
5 ft., 11 in.	100	†	†	†	†	179	183	185	187	189
	110	180	182	186	189	192	194	196	197	199
	120	193	193	194	198	199	201	204	206	208
	125	198	197	199	201	203	206	208	211	213
	135	207	205	206	209	210	213	216	219	220
	140	211	209	210	212	213	217	220	222	224
	150	218	217	216	217	219	223	227	229	232
	160	225	224	224	224	225	230	233	236	238
6 ft., 0 in.	100	†	†	†	†	181	186	189	190	192
	110	179	183	188	191	195	197	200	201	203
	120	193	195	196	201	203	205	208	211	213
	125	199	199	201	204	207	210	213	216	218
	135	208	207	208	212	214	217	219	223	225
	140	213	211	212	215	216	221	223	226	229
	150	220	219	219	221	223	227	231	233	236
	160	227	227	227	228	229	234	238	241	243
6 ft., 1 in.	100	†	†	†	†	184	190	193	194	196
	110	180	185	191	194	198	202	204	205	208
	120	195	199	200	204	207	210	213	217	219
	125	201	201	204	207	211	215	218	222	224
	135	209	208	209	212	217	222	223	228	231
	140	216	213	215	218	221	226	228	232	235
	150	223	222	222	224	226	231	235	238	241
	160	229	230	230	231	232	238	243	246	249
6 ft., 2 in. and over	100	†	†	†	†	188	193	199	200	202
	110	180	187	193	197	201	205	208	210	212
	120	196	200	202	209	213	215	219	222	225
	125	202	204	207	211	216	219	223	227	229
	135	210	211	212	216	221	227	228	232	236
	140	218	216	217	221	225	230	232	235	240
	150	225	225	225	228	230	236	239	244	246
	160	231	233	233	236	237	244	248	252	254

* Based on Medico-Actuarial Reports, 1912–1918.
† At these heights and ages, all weights are over 100% mortality.

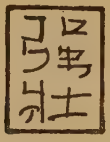
ADDITIONS TO MORTALITY RATIOS FOR OVERWEIGHTS WITH EXCESS ABDOMINAL GIRTHS

Abdominal Girth	Ratios, 100% to 140% incl.			Ratios, 150% and 160%		
	Under Age 40	Age 40–50	Age 50 and over	Under Age 40	Age 40–50	Age 50 and over
1-inch excess.....	0	0	5	0	5	10
2-inch excess.....	0	5	10	5	10	15
3-inch excess.....	5	10	15	10	20	25
4-inch excess.....	10	15	25	20	30	40

Now turn to the table "Additions to Mortality Ratios for Overweights with Excess Abdominal Girths." To be merely overweight is bad enough, but the scales do not tell the whole story. You must use the tape measure as I showed you, to get the chest-abdomen ratio. If you carry your excess weight well distributed over the body with a big chest and a tight abdomen, it is not so bad—but if your abdomen bulges your chances are poorer by far. Every inch the abdomen girth exceeds the chest girth carries its penalty. A four inch excess may make as much difference as does forty pounds of excess weight. These facts from the hard-headed life insurance company came to my attention just as this book is going to press, gratifying statistical evidence supporting our personal experience. It puts in terms of dollars and cents the value of the instruction that you have been getting in the earlier chapters of this book.

A bulging abdomen is not so much an index of fatness as it is of the degree of ptosis. A bulging abdomen may or may not be accompanied by excessive overweight. In fact it has a significance all of its own which is becoming recognized as a sign of vital inefficiency.

If your abdomen bulges, get to work. Re-read this book and everywhere you see the word "ptosis" study the instructions with care and rid yourself of a handicap that is shortening your life and taking much out of it. Others have done it and so can you.



CHAPTER XVII

THE PHYSICIAN

CONTENTS

A NEW FIELD
THE HEALTH DOCTOR
THE HEALTH EXAMINATION
PRESCRIPTION OF EXERCISE
BLANKS FOR PRESCRIPTION

CHAPTER XVII

THE PHYSICIAN

A new field is opening for the physician.

You are being called upon to make people's lives happier, stronger and more efficient. You are the proper source from which the world will gain its health, happiness and efficiency. You will build strength. You will teach men, women and children how to live so that they will get the better things into their lives and will possess good health in great abundance. You are to be the Health Doctors, for a new point of view, that of Constructive Health, is beginning to sweep over the country.

You have conquered many diseases—smallpox, the black plague, yellow fever and the hook worm are fading into history. Tuberculosis, diphtheria and malaria are fast giving way. You have thrown great sanitary safeguards around civilized communities and have made marvelous records in disease prevention.

The next step is the making of superior men, capable of living 100% lives—an increasingly better race, living

more fully, happily and efficiently, to the greater glory of God—and man.

THE HEALTH DOCTOR

The Health Doctor is a specialist in constructive health. He is first a good physician—an all-around family doctor who knows daily life as well as disease. People will come to him as clients come to a lawyer, to take care of their business affairs and estates and keep them out of trouble. Just so people are coming to the Health Doctor, putting their health in his charge.

You will give your clients a searching examination and have them report to you at intervals thereafter of one month, three months or six months, *pro re nata*.

OUTLINE OF THE HEALTH EXAMINATION

The health examination will contain the following:

1. History.
   a. The usual schedule of records should be taken, including a searching inquiry into the kind of stock from which your client comes. Not only the health, diseases and tendencies of the parents and grandparents but aunts, uncles, sisters and brothers should be inquired after.

      There is a greater resemblance in families in the internal organs than there is in faces.

   b. The usual record of diseases, disabilities and operations should be recorded and focal infections should be included.

2. Habits.

   Most disabilities and diseases have their causes in unhygienic habits. Inquire into diet, work, rest, recreation, exercise, tea, coffee, alcohol, tobacco —with a diplomatic handling of sex questions.

3. Measurements of weight, height, chest and abdomen girths should be taken.

   The two tests of posture, referring both to the relation of the front and the back of the body to perpendiculars should be recorded, with spinal curvature and flat feet.

4. Physiological tests, including the strength of the grip, vital capacity, blood ptosis test, exercise tolerance test, intestinal mobility and intestinal clearance and hæmoglobin should be recorded.

5. Pathological conditions should be searched for. This should include a urinalysis with special reference to indican; the heart with its valves, muscular condition and rhythm; the arteries, veins, and capillaries; signs of age in the eye; infections of the ear, pharynx, nose and teeth; indications of body toxæmia in the cervical, axillary, epi-trochlear lymph glands; with a careful notation of stomach, liver, gall bladder, small and large intestines, appendix, skin, genitals and joints.

6. Endocrine analysis is in its infancy. It occasionally has some bearing on the health and efficiency of the patient and should be made a matter of observation.

The examination completed, the real work of the Health Doctor begins—in coöperating with the client, in

organizing his life and his life affairs to best advantage. This is a science and an art in a field which deserves a volume in itself. Part of the instruction of the doctor to the client will be devoted to exercise.

PRESCRIPTION OF EXERCISE

From your examination you have clearly defined the client's several needs. They should be tabulated and studied. You should not attempt to correct all deficiencies at once. Concentrate on points of greatest immediate need. Start slow. It is frequently advisable to give only one, two or three exercises in the beginning. They should be taught thoroughly either by the physician or by an assistant who has been adequately trained. Avoid assistants who are committed to any one system of exercise just as you would avoid a physician who is committed to any one system of medicine. Make your clients show you their progress in your consulting room. Correct, check up, encourage and teach the new exercises yourself. Make your requirements reasonable, well adjusted to life, to work and to limitations.

Test your clients frequently to see if they are actually getting the desired results, for nothing is any good unless it proves itself.

The following schedule can be used as a prescription blank and your client can bring this book to you for record of his tests and change in prescription as well.

DAILY MORNING EXERCISE

MINUTES 2, 3, 4, 5, 6, 7, 8, 9, 10 (check)

	Slow, Moderate, Fast	*No. of Times*	*2nd Prescription*	*3rd Prescription*
I. STRETCH				
Sky Lift				
Air Push				
II. PUMPING by Threes				
Pumping by Fives				
Abdominal Breathing				
Packing				
Reversed Breathing				
III. KICK UP				
Knee Raising Triad				
Sigmoid Appendix Special				
Leg Raising Triad				
Toe Touching				
Sit Up				
Touch Back				
The "L"				
Cross Over				
Bicycle				
Adams Bicycle				
Scissors				
Double Scissors				
IV. CHURNING				
Pussy Cat				
Dog Wag				
Camel				
V. TICKLE TOE				
N—E—W—S				
Knee Raising				
Kicking				
Cross Kick				
Double Whirl				
VI. PEP STEPS				
Running in Place				
Running Knees Up				
Running Heels Up				
Indian Steps				
Side Rocker				
Forward Rocker				
Swing Step				
Irish Kick				
VII. STAR GAZER				
Hen Peck				
Restricted Rotation				
Half Bridge				
Three-Quarter Bridge				
The Bridge Complete				
Rolling Bridge				
Head Stand				
Stage 1				
2				
3				
4				
5				
6				

DAILY WALK 10—20—30—45—1 hour

After Breakfast
Before Lunch
After Lunch
Before Dinner
Evening

THE WORK OUT

Setting Up—Game—Bath—Electric Cabinet—Rub Down
Before Lunch
Before Evening Meal
Evening

MORNING BATH

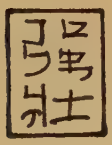
Hot—Minutes, Warm—Minutes, Cool—Minutes,
Cold—Minutes
Shower
Spray
Tub

ONE-HALF DAY OFF Rest at Home (horizontal) Sleep
Non-Motor Recreation—Theatre, Moving Pictures, Concert
Motor Recreation—Golf 9 holes—18 holes, Spray
Bath—Hot, Warm, Cool, Cold
Rub Down
Hike—Tennis—Swimming

SUNDAY

A.M. Tennis — Walk — Rest — Church — Golf — Hike—Motor

P.M. Rest — Walk — Tennis — Golf — Hike — Motor — Swimming — Skating — Theatre — Movie



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BLOOD PTOSIS TEST

PERCENTAGE SCALE

[Crampton Value]

BLOOD PRESSURE

PULSE RATE			Increase on Standing										Decrease on Standing										
Increase on Standing		Decrease	20–19	18–17	16–15	14–13	12–11	10–9	8–7	6–5	4–3	2–1	0	–1–2	–3–4	–5–6	–7–8	–9–10	–11–12	–13–14	–15–16	–17–18	–19–20
–8	To	–12	140	135	130	125	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40
–4	"	–8	135	130	125	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35
0	"	–4	130	125	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30
0	To	4	125	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25
5	"	8	120	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20
9	"	12	115	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15
13	"	16	110	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
17	"	20	105	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5
21	"	24	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0
25	"	28	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5
29	"	32	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10
33	"	36	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15
37	"	40	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15	–20
41	"	44	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15	–20	–25
45	"	48	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15	–20	–25	–30
49	"	52	65	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15	–20	–25	–30	–35
53	"	56	60	55	50	45	40	35	30	25	20	15	10	5	0	–5	–10	–15	–20	–25	–30	–35	–40
57	"	60	55	50	45	40	35	30	25	20	15	10	–5	0	–5	–10	–15	–20	–25	–30	–35	–40	–45

PERIODIC HEALTH EXAMINATION

PREPARED AND PUBLISHED BY THE
American Medical Association, 535 North Dearborn Street, Chicago, Illinois

Form A

HISTORY FORM

1. **Name** **Country of Birth**

2. **Address** **White or Colored?**

3. **Age** **Religion** **Single, married, widowed, divorced?**

4. **What is your present occupation?**

5. How often have you changed your work? **Why?**

6. **What are the conditions of your work?**
   Regular, Satisfactory, Monotonous, Dangerous, Fatiguing, Indoors or out,
   Light, Dark, Dusty, Smelly, Noisy, Crowded, Seated, Standing,
   Walking, Hours per day? Days per week?

7. Do you support yourself, or others, by your work?

8. **What are your home conditions?**
   In a family, Alone, Room and bed to yourself, Quiet, Time to yourself,
   Congenial, Depressing, Irritating?

9. **What are your sleeping conditions?**
   Hours in bed, Window open, Restful, Disturbed by children or others?

10. **How often do you eat?**
    Regularly, Where, Between meals, Time at meals?

11. **Are you a moderate or hearty eater?**
    Meat (including fish and eggs)
    Baked beans
    Green vegetables (spinach, cabbage, etc.)
    Potatoes (or rice, macaroni or cereal)
    Pie, cake or pastry

    Taking one or more helpings at a meal of:
    Sweets or sugar
    Fruit
    Salads
    Bread

12. **How much do you drink daily of:**
Water
Milk
Tea
Coffee
Soft Drinks
Alcoholic Drinks

13. How frequently do you use candy? How much tobacco?

14. **Do you have a movement of the bowels daily without the use of drugs?**

15. Do you take any regular exercise in addition to your work?
Competitive, Strenuous, Under direction, Indoors or out?

16. To what extent do you share in social, church, political, club or trade associations?

17. What are your pleasures or recreation?

18. **Are you subject to worries or moods, or periods of gloom and cheerfulness?**

19. **Have you ever been ill with any of the following, and at what ages?**
Tuberculosis
Malaria
Rheumatism
Syphilis or Gonorrhea
Scarlet Fever
Diphtheria
Typhoid Fever
Tonsillitis (Sore Throat)
Frequent Colds
Convulsive Seizures
Nervous Breakdown
Migraine or Neuralgia

20. **Have you been protected against smallpox, typhoid, diphtheria or other diseases by vaccination, and when?**

21. Have you had any accidents, broken bones or surgical operations?

22. How often do you consult your dentist? When last?

23. **Are your parents, brothers and sisters living?**
If not, what were the causes of death and at what ages?

24. Do you remember any diseases in your family which may have affected your own health?

25. **Do you consider yourself in good health?** If not, what is your complaint?
If a woman, answer these:

26. **Are your monthly periods regular?** Prolonged? — Excessive?

27. **Have they interfered with your occupation,** by pain? or headache?

28. **Have pregnancies and confinements been free from accident?**

Form B

PHYSICAL EXAMINATION RECORD

Name

Case No.

Date

1. Height

Weight, Usual

Present

(Theoretical normal for age and height)

Temp.

Pulse S

L

Bl. Pres. S { Sys. / Dias.

L { Sys. / Dias.

Hearing R

L

Vision R

L

Corrected R

L

Urine: appearance

Sp. gr.

Sugar

Feces: appearance

parasites

2. Standing

Posture

Muscle tests

Nutrition

Skin

Superficial glands

Female Breast

Chest

Hands

Arms

Male genitalia

Hernia

Legs

Romberg

3. **Sitting**
   - Hair
   - Eye reflexes
   - Nose
   - Teeth
   - Gums
   - Tongue
   - Tonsils
   - Pharynx
   - Ears
   - Heart
   - Lungs

4. **Lying**
   - Abdomen
   - Reflexes
   - Sensation
   - Liver
   - Spleen
   - Kidneys
   - Female genitalia
   - Rectum (hemorrhoids)

5. Summary: Defects of function and structure and errors of habit.

6. Advice given to the patient:

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